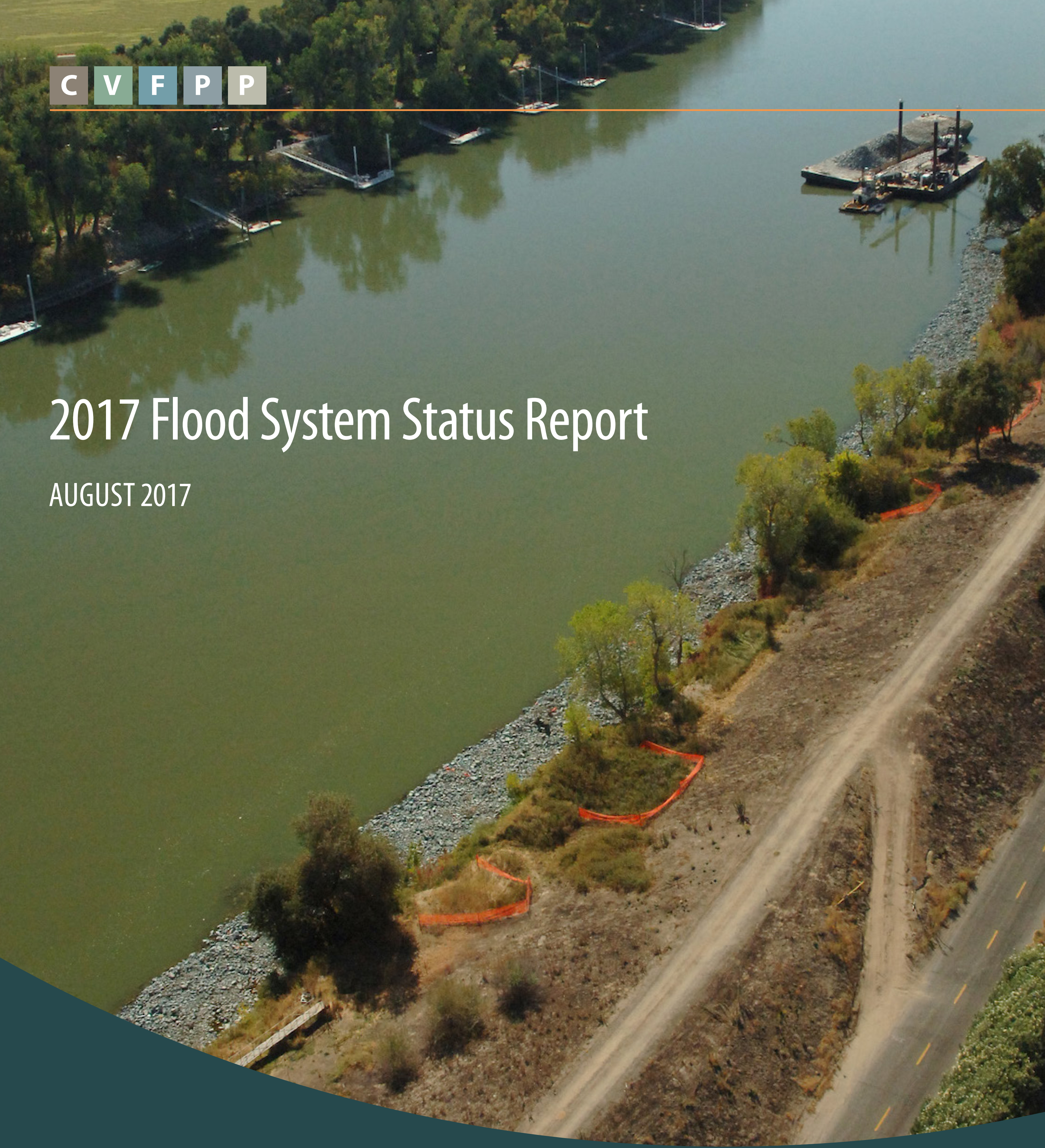
CVFPP



2017 Flood System Status Report

AUGUST 2017

CALIFORNIA DEPARTMENT OF WATER RESOURCES

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2017 Flood System Status Report

August 2017

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

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Foreword

On behalf of the Department of Water Resources, we are pleased to present the 2017 Flood System Status Report (FSSR). This report is intended to assist flood management planners and engineers in characterizing facilities within the State Plan of Flood Control (SPFC) and to inform the 2017 Central Valley Flood Protection Plan Update (2017 CVFPP Update). The 2017 FSSR provides a concise repository of the status of SPFC Facilities as noted in related DWR evaluation and inspection efforts, along with the efforts of our local and federal partners. The 2012 CVFPP laid the foundation necessary for compliance with the Central Valley Flood Protection Act of 2008 and a new approach to flood management in the Central Valley.

As a supporting and informational document to the 2017 CVFPP Update, the 2017 FSSR includes information about inspecting and evaluating SPFC facilities. It also details and quantifies major components of existing flood risk within the Sacramento and San Joaquin river watersheds, and the factors that influence flood risk in relation to the various flood control structures within the SPFC. Additionally, the 2017 FSSR informs and details the current conditions of levees and channels within the SPFC, and includes finalized project information from DWR's Levee Evaluations Program. Through updating the status of SPFC facilities, the State of California can continue to make informed decisions related to flood risk management.

This document is a collaborative effort by DWR, local, and federal partners, signifying a step forward in gaining deeper understanding of the flood system's current status and condition in the Central Valley.

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Executive Summary

The Sacramento and San Joaquin river watersheds include an extensive flood management system comprising State of California (State)-federal project facilities and other facilities that are not part of the State-federal project. All State-federal project facilities in the Sacramento and San Joaquin river watersheds are part of the State Plan of Flood Control (SPFC), as defined in the State Plan of Flood Control Descriptive Document (Updated Version — August 2017*)* created by the California Department of Water Resources (DWR). SPFC facilities primarily include project levees, channels, and associated flood control structures in the Sacramento and San Joaquin river watersheds of California. SPFC facilities also include other elements identified in California Water Code Section 8361.

Section 9651 of the California Water Code (CWC) defines the State Plan of Flood Control (SPFC) as follows:

> *"State Plan of Flood Control" means the state and federal flood control works, lands, programs, plans, policies, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project described in Section 8350, and of flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Section 12648) of Chapter 2 of Part 6 of Division 6 for which the board or the department has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Section 8361.*

California Water Code Section 9120 (a) states:

"The department shall prepare and the board shall adopt a flood control system status report for the State Plan of Flood Control. This status report shall be updated periodically, as determined by the board. For the purpose of preparing the report, the department shall inspect the project levees and review available information to ascertain whether there are evident deficiencies.

(b) The status report shall include identification and description of each facility, an estimate of the risk of levee failure, a discussion of the inspection and review undertaken pursuant to subdivision (a), and appropriate recommendations regarding the levees and future work activities."

This 2017 Flood System Status Report (FSSR) describes the current status (i.e., the physical condition) of SPFC facilities at a systemwide level to support monitoring and tracking of metrics related to performance of the CVFPP over time. While the current list of metrics supports monitoring and tracking of plan performance related to the CVFPP primary goal of improving flood risk management, additional metrics may be developed and added for future updates (such as ecosystem metrics from the Conservation Strategy). DWR prepared this 2017 FSSR to meet the legislative requirements of California Water Code Section 9120, the Central Valley flood Protection Act of 2008, and to contribute to development of the Central Valley Flood Protection Plan (CVFPP). The CVFPP will guide future State investments through projects to address identified problems in the SPFC.

This 2017 FSSR primarily presents information about the physical condition of SPFC facilities, and will help guide future inspection, evaluation, reconstruction, and improvement of those facilities. Information in this 2017 FSSR should not be used to predict how a levee or associated facilities may perform during a specific flood event. In addition, more detailed information, such as additional geotechnical explorations and analyses at a greater frequency, may be necessary to meet other assessment purposes, such as determing whether a levee could be certified under Federal Emergency Management Agency (FEMA) standards to provide base flood protection under the National Flood Insurance Program.

Role of the Flood System Status Report

The 2017 FSSR contributes to development of the 2017 CVFPP Update in the following ways:

- Consolidates all available systemwide information from multiple DWR programs regarding SPFC physical conditions, and presents the information in a format that assists with facilitating future updates.
- Supports the collaboration of DWR and the Central Valley Flood Protection Board (Board) with State, federal, regional, and local agencies when:
  - Defining flood management system challenges and needs
  - Developing alternative solutions
  - Implementing future projects to address identified problems and improve the current condition of the flood management system

In addition to meeting legislative requirements and contributing to the 2017 CVFPP Update, information in this 2017 FSSR may be used to support the core functions and long-term activities of DWR's Division of Flood Management, including emergency response, facility maintenance, and inspections. Periodic updates to the FSSR will help DWR to track progress as ongoing inspections and evaluations are completed and more SPFC facilities are reconstructed or improved to meet current design criteria. Future updates have potential to support monitoring and tracking of additional metrics as they are developed over time (such as ecosystem metrics from the Conservation Strategy).

Need to Evaluate SPFC Status

SPFC facilities were built in increments over many decades, with many of its levees constructed by landowners and local entities after 1850 and through the early 1900s. These levees were constructed before the initial federally authorized project was established (i.e., the Sacramento River Flood Control Project). The United States Army Corps of Engineers (USACE) accepted some of these levees into the federal project without modification, improved some levees, and engineered new levees in other locations. Most levees included in what is now termed the SPFC in the Sacramento River watershed were accepted, improved, or constructed by USACE between

1918 and the mid-1960s. Most SPFC levees in the San Joaquin River watershed downstream from the Merced River confluence were improved as directed by USACE between the mid-1950s and early 1970s. In the San Joaquin River watershed upstream from the Merced River confluence, most SPFC levees were improved or constructed by DWR between the 1960s and early 1970s.

SPFC facilities now face many pressures that were not known or did not exist when they were originally constructed. Design criteria and construction methods have become more stringent over time as the understanding of geotechnical, hydrologic, and other technical aspects of flood management have improved. As a result, most facilities constructed in the early to mid-twentieth century do not meet current criteria. In some cases, facilities are now obsolete or have nearly exceeded their expected service lives, and are in need of major modification or repair. Further, facilities originally constructed primarily for navigation/sediment transport and flood management are now also recognized as important for water supply conveyance, ecosystem functions, recreation, and other beneficial uses.

Approach

To evaluate the condition of SPFC facilities, DWR considered a variety of factors that could influence the performance of SPFC levees, channels, and flood control structures. Information from DWR's inspection and evaluation activities are considered high-level indicators of a levee's physical conditions relative to specified standards. For some factors, DWR's approach may differ from an approach that USACE or other agencies might use for other evaluations or purposes. In these cases, the difference is acknowledged, although only DWR's approach is used as the basis for results presented in this 2017 FSSR.

The DWR Levee Evaluations Program, including its Urban Levee Evaluations Project (ULE) and Nonurban Levee Evaluations Project (NULE), is the primary source of information for evaluating the condition of SPFC levees. ULE and NULE both assessed the geotechnical condition of levees, but urban levees underwent a more comprehensive evaluation because of public safety considerations in densely populated areas. DWR concluded ULE and NULE evaluations in December 2015, and that information is incorporated into this 2017 FSSR.

Levee conditions reported in this 2017 FSSR also rely on information from DWR's annual inspections and other available data that supplement DWR Levee Evaluations Program results.

In general, channel conveyance conditions were determined by using the most recent available hydraulic modeling to evaluate whether the channels have the ability to pass design capacities presented in operations and maintenance (O&M) manuals and design profiles. Channel conditions reported also include DWR's annual inspections for vegetation and sedimentation. In addition, reported flood management structure conditions are based on DWR's annual inspections.

This 2017 FSSR reflects existing facility conditions (including past performance) at the time the 2017 FSSR was prepared, however, some results represent initial findings of ongoing evaluations. Many ongoing inspections, geotechnical evaluations, and hydraulic evaluations will yield additional information on facility conditions. In addition, subsequent facility improvements, repairs, and reconstruction are likely to affect facility conditions reported in this 2017 FSSR. Where applicable, any changes in findings will be reflected in future updates to the FSSR.

Findings

The flood management system has provided tremendous benefits to public safety and protection of property in the Central Valley; it has prevented loss of life and many billions of dollars in flood damages since facilities were originally constructed. However, when evaluated against modern engineering and safety criteria, some SPFC facilities face a higher chance of failure during a flood event than other facilities. Table ES-1 lists factors that influence facility performance, findings related to each factor, and the relative threat posed by the factor.

The relative threat posed by each factor is a subjective representation of the prevalence of the factor and how much the presence of that factor would contribute to a potential facility failure. Factors identified as a “high” relative threat to SPFC facilities generally are the most prevalent and/or greatly contribute to potential facility failure. Those identified as a “low” relative threat to SPFC facilities generally are the least prevalent and/or contribute less to potential facility failure. Likewise, factors identified as a "medium" relative threat to SPFC facilities are moderately prevalent and/or contribute moderately to potential facility failure. As such, the relative threat posed by each factor is subjective in nature and serves only to help identify and prioritize the factors most likely to contribute to SPFC facility failures. Prioritizing relative threats affecting SPFC facilities does not necessarily translate directly into investment priorities. To decide which levels of investment are prudent for repairs or improvements, economic and life safety, and environmental compliance, consequences associated with potential failure must also be considered. The potential consequences of facility failure are not considered in this 2017 FSSR, but are evaluated in the 2017 CVFPP Update.

Table ES-1. Summary of 2017 Flood System Status Report Findings

	Factors	Findings	Relative Threat Posed by Factor[1]
Levees	**Overall Levee Condition (multiple factors)**	• Approximately half of SPFC urban levees do not meet current levee freeboard, stability, or seepage design criteria at the design water surface elevation. • Approximately three-fifths of SPFC nonurban levees have a high potential for levee failure from underseepage, through seepage, structural instability, and/or erosion at the assessment water surface elevation.	See Figure ES-1
	Levee Geometry Check	• Approximately one-third of SPFC urban levees deviate from current standard levee design prism criteria. • Levee geometry deviates significantly from the standard levee design prism criteria for some nonurban SPFC levees.	Medium
	Seepage	• Approximately one-third of SPFC urban levees do not meet current seepage design criteria. • Almost half of SPFC nonurban levees have a high potential for levee failure from underseepage. • Approximately one-quarter of SPFC nonurban levees have a high potential for levee failure from through seepage.	High
	Structural Instability	• Approximately one-fifth of SPFC urban levees do not meet current structural stability design criteria. • Approximately one-eighth of SPFC nonurban levees evaluated in the Sacramento River watershed and 1 percent in the San Joaquin River watershed have a high potential for levee failure from structural instability.	Medium
	Erosion	• Erosion assessments for urban levees are underway, and results are not available at this time. • Almost one-seventh of SPFC nonurban levees have a high potential for levee failure from erosion.	Medium
	Settlement	• Four known localized levee locations have settlement (localized depressions) that endangers the integrity of SPFC levees. [5]	Low
	Penetrations[2]	• More than 7,000 penetrations are documented in SPFC levees, and many more remain undocumented.	Medium
	Levee Vegetation	• About 309 miles of SPFC levees comply with the 2012 Board Vegetation Management Strategy criteria.[3,5]	Low
	Rodent Damage	• More than one-third of the 1,459 miles of SPFC levees studied had at least eight reported occurrences of burrowing activity over a 21-year study span.	Medium
	Encroachments[4]	• Approximately 1,730 encroachment sites were identified as either Minimally Acceptable or Unacceptable.	Medium

Table ES-1. Summary of 2017 Flood System Status Report Findings

	Factors	Findings	Relative Threat Posed by Factor[1]
Channels	**Inadequate Conveyance Capacity**	• Approximately half of the 1,016 miles of SPFC channels evaluated are potentially inadequate to convey design flows, and require additional evaluation to confirm conditions. • Approximately one-quarter of channel design capacities reported in O&M manuals do not agree with flows specified in the design profiles.	Medium
	Channel Vegetation	• Of the 233 miles of SPFC channels inspected by DWR, 13 locations were rated as Unacceptable and 56 locations were rated Minimally Acceptable because of vegetation and obstructions.	Low
	Channel Sedimentation	• Of 233 miles of SPFC channels inspected by DWR, eight locations were rated Unacceptable and 26 locations were rated Minimally Acceptable because of shoaling/sedimentation.[5]	Low
Structures	**Inadequate Hydraulic Structures**	• Of 51 SPFC hydraulic structures inspected by DWR, none were rated as Unacceptable and six were rated as Minimally Acceptable.[5]	Low
	Inadequate Pumping Plants	• Of 13 SPFC pumping plants inspected by DWR, none were rated Unacceptable and only one was rated Minimally Acceptable.[5]	Low
	Inadequate Bridges	• Of 11 SPFC bridges inspected by DWR, two were in need of repair.[5]	Low

Notes:

[1] The relative threats listed in Table ES-1 were generated based on professional experience of technical staff from DWR and partner agencies.

[2] Penetrations include man-made objects that cross through or under a levee or floodwall and have the potential to provide a preferential seepage path or hydraulic connection with the waterside. Typically, a penetration is a pipe or transportation structure, such as a roadway or rail line.

[3] This finding is based on 2012 Board Vegetation Management Strategy criteria and not on USACE levee vegetation criteria. Comparison with USACE levee vegetation criteria would show that more SPFC levees do not comply.

[4] Encroachments are any obstruction or physical intrusion by construction of works or devices, planting or removal of vegetation, or caused by any other means, for any purpose, into a flood control project, waterway area of the flood control project, or area covered by an adopted plan of flood control per Title 23 of the California Code of Regulations, Chapter 1, Article 2, Section 4 (m). Encroachments include boat docks, ramps, bridges, sand and gravel mining, placement of fill, fences, retaining walls, pump stations, residential structures, and irrigation and landscaping materials/facilities.

[5] Inspection results reported are from DWR's 2015 inspections.

Key:
DWR = California Department of Water Resources
O&M = operations and maintenance
SPFC = State Plan of Flood Control
USACE = United States Army Corps of Engineers

The overall condition of urban levees, nonurban levees, channels, and flood control structures of the SPFC can be summarized as follows:

- **Urban levees** – Approximately over half (185 miles) of the SPFC urban levees evaluated (320 miles) do not meet current levee freeboard, stability, or seepage design criteria at the design water surface elevation. Of the approximate 110 miles of Non-SPFC Urban levees evaluated, roughly half (50 miles) do not meet current levee freeboard, stability, or seepage design criteria at the design water surface elevation. Design criteria are based on USACE's Engineer Manual (EM) 1110-2-1913, Design and Construction of Levees (USACE, 2000) and DWR's Urban Levee Design Criteria (ULDC) (DWR, 2012a).
- **Nonurban levees** – Approximately 597 miles of about 1,100 miles of SPFC nonurban levees evaluated do not meet acceptable criteria for underseepage, through seepage, structural instability, and/or erosion at the assessment water surface elevation. Of the 187 miles of non-SPFC, nonurban levees, approximately 70 miles do not meet acceptable criteria for underseepage, through seepage, structural instability, and/or erosion at the assessment water surface elevation. Where available, the 1955/57 design water surface elevations were used as the assessment water surface elevation. In the absence of 1955/57 design water surface elevations, the assessment water surface elevation was based on freeboard requirements for each levee segment (i.e., generally 3 feet below the levee crown).

  Nonurban levees were evaluated based on systematic, consistent, repeatable analyses that correlated geotechnical data with levee performance history, not relative to any current design criteria. This approach was selected because the NULE study area was significantly greater than the ULE study area, making it difficult to conduct the same level of field explorations and collect similar amounts of geotechnical data.
- **SPFC channels** – Approximately half of the 1,025 miles of channels evaluated in the SPFC have a potentially inadequate capacity to convey design flows, and require additional evaluation to confirm conditions.
- **SPFC flood control structures** – None of the 32 hydraulic structures or 11 pumping plants inspected by DWR for the SPFC were rated Unacceptable during the 2009 inspections. Of the 10 SPFC bridges inspected by DWR in 2009, two were in need of repairs.

The findings in Table ES-1 are relative to DWR's current criteria for use in the CVFPP. In most cases, these criteria are identical, or similar to, USACE criteria. However, differences between DWR and USACE levee vegetation criteria are significant enough that comparison of levees with USACE criteria would likely show more SPFC levees do not comply with current USACE criteria.

Figure ES-1 shows the overall physical condition of SPFC levees considering most of the levee factors in Table ES-1. To simplify representation of levee conditions, Figure ES-1 includes ULE and NULE assessment results that are not directly comparable, because different evaluation methodologies were used for ULE and NULE. Figure ES-1 broadly illustrates which levee reaches are of relatively higher, medium, or lower concern based on the levee's physical condition. Levees shown in purple (higher concern) on Figure ES-1 generally display more performance problems than those shown in green (lower concern). These assessment results do not reflect life safety, economic, or environmental consequences of flooding, which are key factors in planning system repairs and improvements. Potential life safety and economic consequences associated with flooding are evaluated as part of the CVFPP.

To adequately address current and increasing future demands on the SPFC, significant and sustained actions are needed to improve the performance level of existing SPFC facilities. This will include continued efforts at the State, federal, regional, and local levels to assess and evaluate programs and policies affecting the SPFC and conditions of non-SPFC facilities that affect performance of the flood system. Implementing appropriate management actions in a systemwide approach to improve identified problems properly, and to improve flood management throughout the Sacramento and San Joaquin river watersheds, will take many years with incremental improvements occurring over time. It is important to recognize that improvements to the SPFC will be costly and require the active involvement of State, federal, regional, and local interests. Significant amounts of funding will be needed for future project planning, development, implementation by USACE and the State, and for more sustainable long-term O&M.

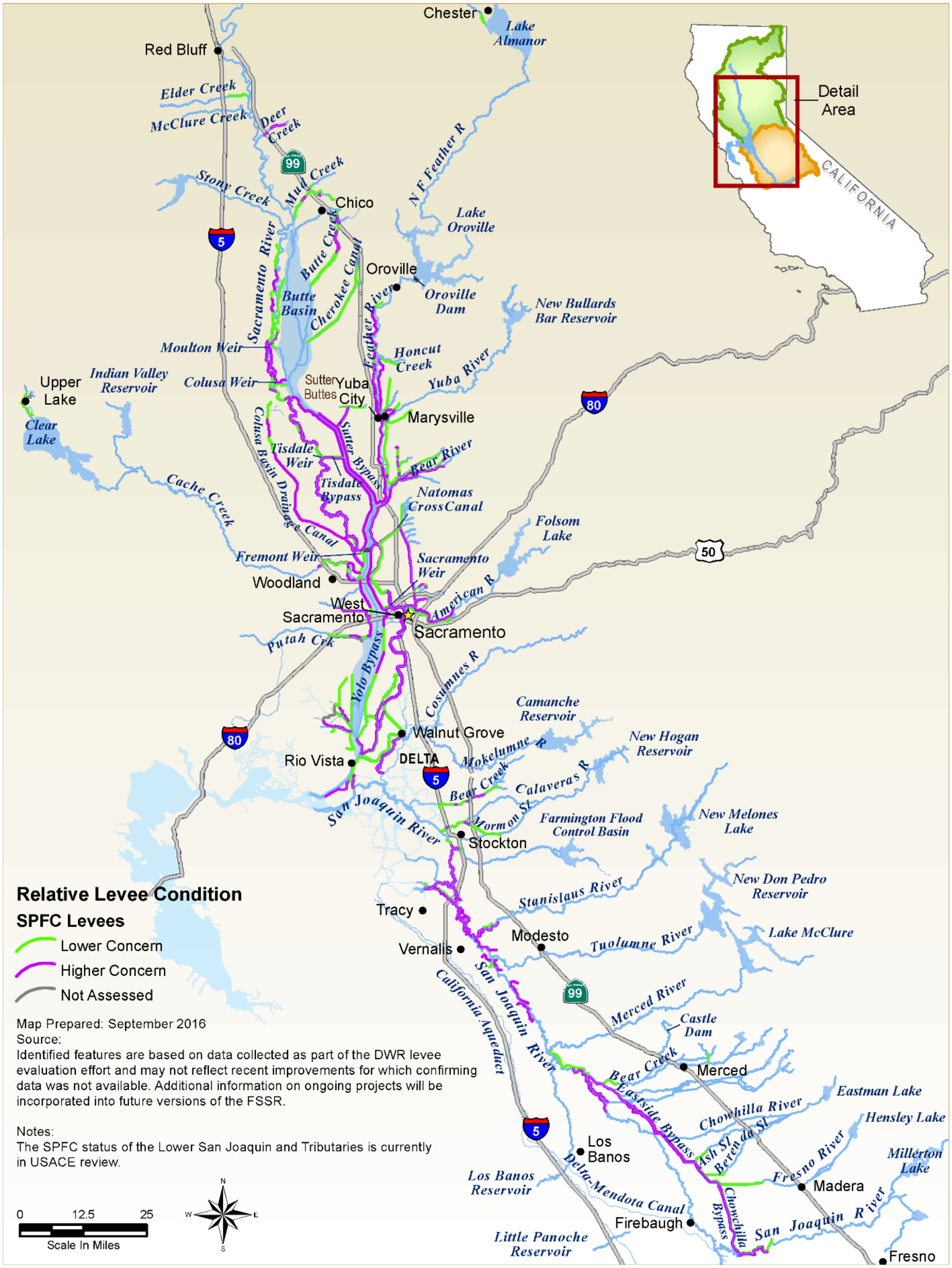
Local communities, both urban and nonurban, will require significant financial and technical assistance from the State and federal governments over the next 25 to 30 years to implement the CVFPP. FSSR findings provide important information for the CVFPP as part of an iterative approach to monitoring and tracking flood system conditions over time and for informing flood management actions.

Recommendations

Key 2017 FSSR recommendations regarding future DWR work include the following:

- Pursue Board adoption of 2017 FSSR findings, as required by California Water Code Section 9120, and support the Board in communicating 2017 FSSR recommendations to the California Legislature.
- Update the FSSR periodically per California Water Code Section 9120(a), and as requested by the Board following possible adoption of the 2017 CVFPP Update, by incorporating updated results of inspections, evaluations, and special studies into the FSSR.
- Continue to work with State, federal, regional, and local agencies to create a broadly supported CVFPP to guide long-term investments related to the SPFC over the next several decades.
- Recognize that the public expects the flood system to provide other important functions, such as water supply conveyance, ecosystem support, recreational use, and other beneficial uses.
- Build on and improve existing partnerships with federal, regional, and local agencies to develop site-specific actions for the SPFC that are consistent with the integrated, systemwide approach developed in the CVFPP.

- Continue to partner with agencies, and form new partnerships to conduct special studies to improve understanding of the various factors that present threats to SPFC facilities. These studies include continued efforts to research the impacts of levee vegetation, assess locations and importance of levee penetrations, characterize the probability of levee failure, and other technical studies.
- Proceed with multiagency work efforts to further evaluate facility status, identify needed flood system repairs and improvements, and implement them, as State, federal, and local funding becomes available.
- Continue to improve data sharing and accessibility of annual inspection results for partner agencies and the public.



Relative Levee Condition

SPFC Levees

Lower Concern

Higher Concern

Not Assessed

Map Prepared: September 2016

Source:
Identified features are based on data collected as part of the DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional information on ongoing projects will be incorporated into future versions of the FSSR.

Notes:
The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure ES-1. Composite Map of Physical Levee Conditions Based on ULE and NULE Results

1.0 Introduction

The Sacramento and San Joaquin river watersheds include an extensive flood management system comprising State of California (State)-federal project facilities and other facilities that are not part of the State-federal project. All State-federal project facilities in the Sacramento and San Joaquin river watersheds are part of the State Plan of Flood Control (SPFC), as defined in the State Plan of Flood Control Descriptive Document (DWR, 2010a). SPFC facilities primarily include project levees, channels, and associated structures in the Sacramento and San Joaquin river watersheds of California.[1]

This 2017 Flood System Status Report (FSSR) describes the current status (i.e., physical condition) of SPFC facilities at a systemwide level. The California Department of Water Resources (DWR) prepared this 2017 FSSR to meet the legislative requirements of California Water Code Section 9120, and to contribute to development of the Central Valley Flood Protection Plan (CVFPP).

This 2017 FSSR is primarily intended to present information about the physical condition of SPFC facilities, and to help guide future inspection, evaluation, reconstruction, and improvement of the facilities.

1.1 Limitations

Information presented in this 2017 FSSR should not be used to predict how a levee or associated facilities may perform during a specific flood event. For example, more detailed information (such as additional geotechnical explorations and analyses at a greater frequency) would be necessary to assess whether a levee could be certified under Federal Emergency Management Agency (FEMA) standards to provide base flood protection under the National Flood Insurance Program.

1.2 Report Purpose and Scope

In 2007, the California State Legislature directed DWR to prepare a FSSR for the SPFC according to Section 9120 of the California Water Code, which states the following:

> *§9120. (a) The department shall prepare and the board shall adopt a Flood Control System Status Report for the State Plan of Flood Control. This status report shall be updated periodically, as determined by the board. For the purpose of preparing the report, the department shall inspect the project levees and review available information to ascertain whether there are evident deficiencies.*

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[1] State Plan of Flood Control facilities also include other elements identified in California Water Code Section 8361.

> *(b) The status report shall include identification and description of each facility, an estimate of the risk of levee failure, a discussion of the inspection and review undertaken pursuant to subdivision (a), and appropriate recommendations regarding the levees and future work activities.*

California Water Code Section 9651 defines the SPFC as follows:

> *"State Plan of Flood Control" means the state and federal flood control works, lands, programs, plans, policies, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project described in Section 8350, and of flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Section 12648) of Chapter 2 of Part 6 of Division 6 for which the board or the department has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Section 8361.*

The purpose of this 2017 FSSR is to comply with California Water Code Section 9120 and contribute to 2017 CVFPP Update development along with the other supporting efforts. In 2012, DWR fulfilled California Water Code requirements through preparation of two foundational, base condition documents, including the Flood Control System Status Report (FCSSR):

- ***State Plan of Flood Control Descriptive Document*** – The SPFC Descriptive Document (DWR, 2010a) identifies and describes each component of the SPFC (facilities, lands, programs, plans, conditions, modes of operations and maintenance (O&M)). This report fulfills part of the legislative requirement expressed in California Water Code Section 9120 (a) and (b).

- ***Flood Control System Status Report (FCSSR)*** – The FCSSR (DWR, 2011c) described and analyzed the SPFC, and made recommendations regarding SPFC levees and future work activities.

Key documents are shown in Figure 1-1.

Figure 1-1. Main Documents for the 2012 CVFPP

This 2017 FSSR specifically contributes to development of the 2017 CVFPP Update through the following:

- Consolidates all available systemwide information from multiple DWR programs regarding SPFC physical conditions, and presents the information in a format suitable to facilitate continued future updates.
- Supports the collaboration of DWR and the Central Valley Flood Protection Board (Board) with State, federal, regional, and local agencies in defining flood management system problems and needs, developing alternative solutions, and implementing future projects to address identified problems and improve the current condition of the flood management system.

In addition to meeting legislative requirements and contributing to the CVFPP, information in the FSSR may be used to support core functions and long-term activities of DWR's Division of Flood Management, including emergency response, facility maintenance, and inspections. Periodic updates of the FSSR will enable DWR to track progress as ongoing inspections and evaluations are completed and more SPFC facilities are reconstructed or improved to meet current design criteria.

The scope of this 2017 FSSR is to use available information to describe the physical condition of SPFC levees, channels, and structures in the Sacramento and San Joaquin river watersheds (Figure 1-1) at a systemwide level. Information presented in this report should be viewed as the best indication of facility condition for major reaches (many miles) of SPFC facilities rather than to identify individual problems at specific SPFC facility locations.

The SPFC is only a portion of the larger system that provides flood protection for the Central Valley. The performance of SPFC facilities relies on many non-SPFC facilities constructed by the United States Army Corps of Engineers (USACE), DWR, the United States Department of the Interior, the Bureau of Reclamation, and local agencies along many of the rivers, creeks, and streams in the Central Valley. Major non-SPFC facilities that affect the performance of SPFC facilities (or provide flood risk reduction benefits to areas protected by SPFC levees) include levees that are not part of the federal project (i.e., nonproject levees), modifications and alterations to SPFC levees that have not been State-authorized, debris management facilities (such as the Yuba Goldfields), and most of the reservoirs in the Central Valley.

This 2017 FSSR reflects existing facility conditions (including past performance) at the time it was prepared, and some results represent initial findings of ongoing evaluations. Many ongoing inspections, geotechnical evaluations, and hydraulic evaluations will yield additional information on facility conditions. In addition, subsequent facility improvements, repairs, and reconstruction would likely affect facility conditions reported in this 2017 FSSR. Where applicable, any changes in findings will be reflected in future updates to this 2017 FSSR.

For some factors, DWR's approach may differ from an approach that USACE or other agencies would use for other evaluations or purposes. In these cases, the difference is acknowledged, although only DWR's approach is used as the basis for the results presented.

Figure 1-2. Sacramento and San Joaquin River Watersheds for the State Plan of Flood Control

1.3 Need to Evaluate Status

SPFC facilities were built in increments over many decades, with many levees constructed by landowners and local entities after 1850 and through the early 1900s, before the initial federally authorized (Sacramento River Flood Control Project [project]) was established. USACE accepted some of these levees into the federal project without modification, improved some levees, and engineered new levees in other locations. Most levees included in what is now termed the SPFC in the Sacramento River watershed were accepted, improved, or constructed by USACE between 1918 and the mid-1960s. Most SPFC levees in the San Joaquin River watershed downstream from the Merced River confluence were improved as directed by USACE between the mid-1950s and early 1970s. In the San Joaquin River watershed upstream from the Merced River confluence, most SPFC levees were improved or constructed by DWR between the 1960s and early 1970s.

SPFC facilities now face many pressures that were not known or did not exist when the facilities were originally constructed. Design criteria and construction methods have become more stringent over time as understanding of geotechnical, hydrologic, and other technical aspects of flood management have improved. As a result, most facilities constructed in the early to mid-twentieth century were not designed or constructed to meet current criteria. In some cases, facilities are now obsolete or have nearly exceeded their expected service lives, and are in need of major modification or repair. Further, facilities originally constructed primarily for navigation/sediment transport and flood management are now also recognized as important for water supply conveyance, ecosystem functions, recreation, and other beneficial uses.

1.4 Report Overview

This 2017 FSSR describes inspection and evaluation activities related to the SPFC, and information on the physical condition of SPFC levees, channels, and flood control structures. It also includes basic findings and recommendations regarding SPFC levees and future work activities. All map-based data presented are in geographic information system (GIS) format. Data and other information collected and evaluated from a multitude of inspection and evaluation activities are used as a basis for summarizing physical conditions with respect to SPFC facilities. The 2017 FSSR contains the following sections:

- **Section 1.0 (Introduction)** provides background information, including the purpose and scope of the FSSR, overview of documents complementary to the FSSR, the need to evaluate the status of SPFC facilities, and this report overview.

- **Section 2.0 (Inspection and Evaluation Activities Related to SPFC Status)** describes annual inspection and reporting done by DWR, periodic inspections by USACE, and joint USACE-DWR inspections. Section 2.0 also describes in detail DWR evaluation activities underway to evaluate geotechnical and hydraulic conditions, and presents an overview of USACE evaluations. Data collected and evaluated through many of these activities are used as the basis for SPFC conditions summarized in Sections 3.0 through 6.0.

- **Section 3.0 (Flood Risk in Sacramento and San Joaquin River Watersheds)** presents a brief overview of flood risk, and factors that influence flood risk. This section includes an evaluation of geotechnical hazard[2] as it relates to the risk of levee failure. Geotechnical hazard information is based on analysis from the Urban Levee Evaluation Project (ULE) and Nonurban Levee Evaluation Project (NULE) of DWR's Levee Evaluations Program. Geotechnical hazard is assessed considering geotechnical factors for levee performance.

- **Section 4.0 (Levee Status)** presents SPFC levee conditions based on data from inspections and evaluations described in Section 2.0, and is organized according to the following subsections, with each subsection including a discussion of status evaluation methodology, limitations, and results of the status evaluations:

    - **Levee geometry check**, with conditions summarized from results of a levee geometry check conducted by the DWR Levee Evaluations Program that compares existing levee geometry to a standard levee design prism.

    - **Seepage**, with conditions summarized from results of the DWR Levee Evaluations Program. ULE evaluated compliance with current seepage design criteria for urban levees, and NULE evaluated potential for levee failure from underseepage and through seepage.

    - **Structural instability**, with conditions summarized from results of the DWR Levee Evaluations Program. ULE evaluated compliance with current structural stability design criteria for urban levees, and NULE evaluated potential for levee failure from structural instability.

    - **Erosion**, with conditions summarized from results of the DWR Levee Evaluations Program. ULE erosion assessment is under development. NULE evaluated the potential for levee failure from erosion.

    - **Settlement**, with conditions summarized from results of DWR's 2015 annual inspections for crown surface/depressions/rutting.

    - **Penetrations,**[3] with conditions summarized from locations of penetrations through levees throughout the SPFC, cataloged by the DWR Levee Evaluations Program.

    - **Levee vegetation**, with conditions summarized from results of DWR's 2015 annual inspections for vegetation on earthen levees based on DWR's 2012 Central Valley Flood Protection Plan Levee Vegetation Management Strategy (DWR, 2012b).

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[2] As reported in the FSSR, "hazard" refers specifically to geotechnical hazard when discussed in relation to the assessments performed under ULE and NULE.

[3] Penetrations include man-made objects that cross through or under a levee or floodwall and have the potential to provide a preferential seepage path or hydraulic connection with the waterside. Typically, a penetration is a pipe or transportation structure, such as a roadway or rail line.

  - **Rodent damage**, with conditions summarized from results of a 2015 DWR assessment of animal burrow persistence on SPFC levees using inspection data from 1984 through 2008.
  - **Encroachments,**[4] with conditions summarized from results of DWR's 2015 annual inspections for encroachments.
- **Section 5.0 (Channel Status).** Channel conditions are presented in Section 5.0. The section presents SPFC channel conditions based on data from inspections and evaluations described in Section 2.0, and is organized according to the following subsections:
  - **Channel conveyance capacity**, with conditions summarized from a comparison of design and estimated flood flow capacities for each SPFC channel. Existing capacities are estimated through systemwide modeling as documented in c Information is also presented to show where design capacities in USACE O&M manuals are inconsistent with design profiles (e.g., 1955, 1957, 1965) (USACE, 1955a; USACE, 1957a; USACE, 1957b; and USACE, 1965).
  - **Channel vegetation**, with conditions summarized from results of DWR's 2015 annual inspections for channel vegetation.
  - **Channel sedimentation**, with conditions summarized from results of DWR's 2015 annual inspections for channel shoaling and sedimentation.
- **Section 6.0 (Flood Control Structures Status)** presents SPFC flood control structure conditions based on data from DWR inspection activities described in Section 2.0. The section is organized according to the following subsections:
  - **Hydraulic structures** (dams, weirs, drop structures, control structures, drainage structures, and outfall gates), with structural, vegetation, encroachment, and erosion/bank caving and shoaling/sedimentation conditions summarized from DWR's 2015 annual inspections for hydraulic structures.
  - **Pumping plants**, with conditions summarized from DWR's 2015 annual inspections for pumping plants.
  - **Bridges,** with conditions summarized from DWR's 2015 annual bridge inspections.
- **Section 7.0 (Approach for SPFC Improvements)** describes the approach and work organization for improving existing conditions of SPFC facilities, including development of the CVFPP.

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[4] Encroachments are any obstruction or physical intrusion by construction of works or devices, planting or removal of vegetation, or caused by any other means, for any purpose, into a flood control project, waterway area of the flood control project, or area covered by an adopted plan of flood control (California Code of Regulations Title 23 Chapter 1 Article 2 Section 4 (m)). Encroachments include boat docks, ramps, bridges, sand and gravel mining, placement of fill, fences, retaining walls, pump stations, residential structures, and irrigation and landscaping materials/facilities.

- **Section 8.0 (Findings and Recommendations)** presents findings from the information presented in Sections 3.0 through 6.0, and provides recommendations specific to levees and future work activities.

- **Section 9.0 (References)** lists the sources used to prepare this 2017 FSSR.

- **Section 10.0 (Acronyms and Abbreviations)** lists acronyms and abbreviations used in this 2017 FSSR.

Appendixes to the main report include the following:

- **Appendix A (Levee Status)** provides supplemental information related to levee conditions described in Section 4.0, including USACE periodic inspection results; historical data; recent, ongoing, and planned improvements and projects; and ongoing actions to improve future evaluations.

- **Appendix B (Channel Status)** provides supplemental information related to channel conditions described in Section 5.0, including a tabular list of channel capacities and conditions; recent, ongoing, and planned improvements and projects; and ongoing actions to improve future evaluations.

- **Appendix C (Flood Control Structures Status)** provides supplemental information related to flood control structure conditions described in Section 6.0, including recent, ongoing, and planned remedial actions, and ongoing actions to improve future evaluations.

2.0 Inspection and Evaluation Activities Related to SPFC Status

This section describes inspection and evaluation activities related to the physical condition of SPFC facilities. While regular inspections can collect large amounts of information on SPFC status quickly, visual inspections alone are inadequate to develop a comprehensive evaluation of SPFC physical conditions. Characterizing other factors that impact the integrity of SPFC facilities requires additional data collection and evaluations. While collection and evaluation activities can provide more detailed information on SPFC conditions than visual inspections alone, they are often time-consuming and require significant resources.

Seepage is a condition that exemplifies the need for data collection and evaluation for levees. Visual inspections can document occurrences of landside boils and/or seepage areas during high water events. However, visual inspections alone cannot provide the necessary information to assess subsurface conditions leading to landside boils and/or seepage.

2.1 Inspection and Reporting for SPFC Facilities

This section describes DWR, Board, and USACE inspection and reporting activities for SPFC facilities.

2.1.1 DWR Inspections and Reporting

The role of DWR in performing annual visual inspections is to comply with USACE inspection and maintenance requirements, and to work with maintaining agencies (including levee districts, reclamation districts, cities, counties, and other public agencies and municipalities) to oversee their maintenance of SPFC facilities. Federal Flood Control Regulations (Title 33 of the Code of Federal Regulations, Section 208.10) require that federal flood protection levees and floodwalls be inspected at least four times per year: immediately before the beginning of flood season, immediately after each major high water period (flood event), and otherwise at intervals not exceeding 90 days. Federal Flood Control Regulations also require that channels and floodways be inspected periodically. Pumping plants are to be inspected at intervals not to exceed 30 days during the flood season, and 90 days during nonflood seasons. In addition, inspections are often necessary at intermediate times to determine if maintenance measures for SPFC facilities are being performed effectively. A semiannual report must then be “submitted to the District Engineer covering inspection, maintenance, of the protective works” (Title 33 of the Code of Federal Regulations, Section 208.10).

In compliance with these federal requirements, DWR conducts several types of inspections. DWR-generated maintenance inspection reports are described in Table 2-1.

Annual Inspection Report of the Central Valley State-Federal Flood Protection System

DWR conducts two comprehensive levee inspections (spring and fall) and one channel and flood control structure inspection each year (summer). Maintaining agencies conduct their own levee inspections in winter and summer and report their results to DWR. DWR and other maintaining agencies also patrol and inspect all SPFC levees during and after high water events. DWR inspections identify status of features (e.g., encroachments, animal burrows, vegetation, and their types and locations) and document their conditions in the form of ratings. DWR reports the results for individual issues according to maintaining agency, levee unit, and levee mile. Based on results of these inspections, DWR and other maintaining agencies plan their maintenance activities and work toward improving ratings before the next inspection.

USACE has significantly increased federal inspection requirements in recent years to improve knowledge of system conditions. The federal policies and programs require engineering evaluations (such as invasive inspections of penetrations) that present compliance challenges for DWR and other maintaining agencies.

Table 2-1. Description of DWR-Generated Maintenance Inspection Reports

Report	Levees	Channels	Flood Control Structures	Description
Annual Inspection Report of the Central Valley State-Federal Flood Protection System	✓	✓	✓	Annual report prepared by DWR based on DWR's fall levee, channel, and flood control structure inspections.
AB 156 Local Agency Annual Report	✓			Annual report prepared by DWR and submitted to the Board by December 31 of each year, based on information submitted to DWR by maintaining agencies by September 30 of each year.
Levee Mile Report	✓			Reports generated by DWR from inspections detailing maintenance issues found during inspections. One report is generated for each unit and includes photos of issues noted.
Annual Supplemental Erosion Survey of the San Joaquin River Flood Control System	✓			Annual report prepared by DWR based on supplemental inspections conducted by DWR personnel. These surveys are summarized in the Annual Inspection Report of the Central Valley State-Federal Flood Protection System.
Annual Hydraulic Structure Inspection Report			✓	Report generated by DWR from annual inspection of hydraulic structures maintained by DWR in accordance with the California Water Code.
Annual Bridge Inspection Report			✓	Report generated from annual inspection of bridges maintained by DWR in accordance with the California Water Code.

Source: DWR, 2015

Key:
AB = Assembly Bill
Board = Central Valley Flood Protection Board
DWR = California Department of Water Resources

Since 2008, a field computer interface inspection tool and georeferenced database have been used during DWR inspections that allow DWR to efficiently capture and compile inspection data and results. Specific criteria and rating descriptions used for inspection items are appended to the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood

Protection System (DWR, 2015b), are described in Sections 4.0 through 6.0 of this 2017 FSSR, and are in Appendix A. These criteria provide the bases for inspection results contained in DWR maintenance inspection reports (Table 2-1) and elsewhere in this 2017 FSSR.

Each inspection item (e.g., obstructive tree, erosion site, encroachment site) receives one of three possible ratings from DWR based on its condition as follows:

- **Acceptable (A)** – No immediate work required, other than routine maintenance. The flood protection project will function as designed and intended, with a high degree of reliability, and necessary cyclic maintenance is being adequately performed.
- **Minimally Acceptable (M)** – One or more deficient conditions exist in the flood protection project that needs to be improved or corrected. However, the project will essentially function as designed except with a lesser degree of reliability than the project could provide.
- **Unacceptable (U)** – One or more deficient conditions exist that may prevent the project from functioning as designed, intended, or required.

The Minimally Acceptable and Unacceptable ratings generally highlight where minor and serious maintenance issues have been observed. Only Minimally Acceptable and Unacceptable ratings are presented in this 2017 FSSR.

Assembly Bill 156 Local Agency Annual Report

In addition to regular DWR levee, channel and flood control structure inspections, California Assembly Bill 156 (Laird, 2007) amended California Water Code Section 9141, and requires local agencies to submit information to DWR for the levees they maintain by September 30 each year. In turn, DWR is required to summarize this information in an annual report to the Board by December 31 each year. DWR prepared the first (Assembly Bill 156) *Local Agency Annual Report* in 2008 and continues to update the report annually (DWR, 2009a). The report is now a combined report with the Local Maintaining Agency Reporting Program, the Utility Crossing Inventory Program, and various other programs. The title of the combined report is: *Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System* (DWR, 2015b).

Monthly Reports to the Board

DWR provides monthly reports to the Board, as requested by the Board. Monthly reports are verbal, and outline recent inspection activities.

Levee Mile Report

DWR prepares a Levee Mile Report for each levee unit inspected by DWR and maintaining agencies during spring, summer, and fall inspections. A Levee Mile Report details maintenance conditions found during an inspection, and includes photos of some problems noted. Maintaining agencies use Levee Mile Reports to plan and conduct maintenance activities, and emergency response agencies use data from the reports to evaluate planned actions during future floods.

Annual Erosion Survey of the San Joaquin River Flood Control System

The San Joaquin River Flood Control System Erosion Survey monitors and documents the condition of erosion sites annually. The erosion surveys include land-based and waterside surveys during the summer. These findings are contained in the Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b). Additional details on this survey are described in Appendix A in Section A-5.

Annual Hydraulic Structure Inspection Report

Annual maintenance inspections are conducted for hydraulic structures (including pumping plants) maintained by DWR. DWR operates and maintains hydraulic structures specified in Section 8361 of the California Water Code and hydraulic structures within State maintenance areas. These inspections identify any repairs, improvements, and/or replacements needed to comply with USACE operations and maintenance requirements and other guidelines. Formalized checklists and inspection criteria are used during each inspection and photographs are taken. The Annual Hydraulic Structure Inspection Report (DWR, 2015d) contains detailed descriptions of the structural integrity of each structure, a prioritized list of repairs (if any), a map illustrating the location of the structures, and a copy of each inspection checklist with updated photographs (DWR, 2015).

Annual Bridge Inspection Report

In 2008, DWR initiated the Bridge Inspection Program to standardize inspection and evaluation of bridges maintained by DWR in accordance with Section 8361 of the California Water Code. Before 2008, inspection and reporting of these bridges was conducted based on Title 33 Code of Federal Regulations, Section 208.10 requirements. The DWR program was initiated to assess in more detail the condition of bridges for conveyance capacity because of their age. The goals of the program are to provide for safe passage for floodfight operations, and to meet local transportation and inspection needs. The Annual Bridge Inspection Report (DWR, 2015a) includes detailed descriptions of each bridge's condition, inspection ratings, photographs, and recommendations for repair, improvement and/or replacement (if any).

DWR Inspection Data in the Flood System Status Report

DWR inspection data are presented in FSSR Sections 4 through 6 according to status factors described in Section 3.0. Inspection data are also contained in Appendix A as supplemental information for factors evaluated more comprehensively in systemwide evaluations.

Inspection data are based on results of the 2015 inspections, and are located in this 2017 FSSR and Appendix A as follows:

- Levee Seepage (Appendix A, Section A-3)
- Levee Structural Instability (Appendix A, Section A-4)
- Levee Erosion (Appendix A, Section A-5)
- Levee Settlement (Crown Surface/Depressions/Ruttings) (Section 4.5)
- Levee Vegetation (Section 4.7)
- Levee Rodent Damage (Appendix A, Section A-7)
- Levee Encroachments (Section 4.9)
- Channel Vegetation (Section 5.2)
- Channel Sedimentation (Section 5.3)

- Hydraulic Structures (Section 6.1)
- Pumping Plants (Section 6.2)
- Bridges (Section 6.3)

2.1.2 USACE Inspections and Reporting

The primary purpose of USACE inspections is to determine whether federal and nonfederal flood protection facilities meet federal maintenance requirements. This determination has a major bearing on the eligibility for federal rehabilitation assistance under Public Law (PL) 84-99. All USACE inspections incorporate instructions from the most recent USACE inspection checklist, in the Flood Damage Reduction Segment/System Inspection Report (2015).

Linking USACE inspection results to eligibility for PL 84-99 rehabilitation assistance has increased the significance of USACE inspections in recent years. A levee system[5] must maintain an Acceptable or Minimally Acceptable rating to retain “Active Status” in the USACE Rehabilitation and Inspection Program. Levees with Active Status before a flood event are eligible for federal assistance after a flood event to repair damages caused by a flood (as authorized by PL 84-99).

There are three types of USACE inspections:

1. **Initial Eligibility Inspections**, which are conducted at the request of a local sponsor for initial inclusion into the USACE Rehabilitation and Inspection Program.
2. **Continuing Eligibility Inspections**, or routine inspections, which are conducted annually or biannually.
3. **Periodic Inspections**, which are conducted on a 5-year interval and include collecting existing historical documents (e.g., manuals, as-built drawings, previous reports) and conducting field inspections (USACE, 2015).

Initial eligibility inspections are performed to establish acceptable and minimum performance levels for nonfederal flood control works to gain an Active Status rating in the USACE Rehabilitation and Inspection Program.

For SPFC facilities, USACE Continuing Eligibility Inspections have been based on DWR annual inspection findings. Based on DWR inspection information, USACE may conduct follow-up inspections with site visits in certain areas before determining its inspection ratings. These follow-up inspection ratings take precedence over DWR inspection results in determining PL 84-99 eligibility. USACE has identified several levee systems as inactive in the PL 84-99 Rehabilitation Assistance program because of issues that USACE inspections have shown could negatively impact levee performance in a high water event. Maintaining agencies for these levee systems are encouraged to implement any corrective actions noted by USACE inspections so that their levees can be reinstated in the PL 84-99 Rehabilitation Assistance Program.

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[5] In this context, a levee system or flood damage reduction system is a complete and independent unit made up of one or more flood damage reduction segments that collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system.

USACE began conducting Periodic Inspections for SPFC facilities in summer 2009. When conducted, Periodic Inspection ratings have precedence over Continuing Eligibility Inspection ratings, and are used to determine the status of facilities in the PL 84-99 Rehabilitation Assistance Program. USACE Periodic Inspection report cards for 10 SPFC levee systems are provided in Appendix A, Section A-1. These report cards summarize findings of USACE Periodic Inspections.

USACE provides inspection results to project sponsors and FEMA. When a levee system previously certified by USACE undergoes a Periodic Inspection, USACE reviews the FEMA certification according to inspection results. USACE procedures for levee system evaluations in support of FEMA certification have been consolidated in the document, Engineer Circular (EC) 1110-2-6067, USACE Process for the National Flood Insurance Program Levee System Evaluation (USACE, 2010a).

2.1.3 Joint DWR, Board, and USACE Inspections and Reporting

DWR, the Board, and USACE cooperate on project-specific inspections such as the Sacramento River Bank Protection Project erosion surveys. USACE, with the Board’s sponsorship, has contracted for waterside erosion surveys of the Sacramento River Flood Control Project since 1998. Each year, DWR, the Board, and the USACE Sacramento District conduct a field reconnaissance review of levee erosion sites for the Sacramento River Flood Control Project.

In 2015, USACE provided their Sacramento Erosion Inspection Report in draft format. After some consideration, it was accepted and used in draft form for the 2015 reporting. The findings of this report are included in the DWR Levee Mile Reports and Annual Inspection Report, and are included in Section 4.4 of this 2017 FSSR.

2.2 Evaluation of SPFC Facilities

This section describes DWR and USACE evaluation activities for SPFC facilities. As mentioned, landside inspection data are limited to what is visible from the crown of a levee. Several other characteristics that impact the integrity of the SPFC require additional evaluations.

Inherent characteristics of SPFC facilities that cannot be observed in visual inspections include the following:

- Subsurface soil conditions
- Underwater levee structure
- Levee geometry
- Compliance with geotechnical design criteria for levees
- Channel conveyance capacity

These characteristics are assessed through evaluation activities as described below.

2.2.1 DWR Evaluations

DWR conducted site-specific geotechnical evaluations of levees through the Levee Evaluations Program. DWR conducted hydraulic evaluations of channel conveyance capacity through the channel capacity evaluation effort for the Sacramento and San Joaquin river systems. Similar detailed evaluations of flood control structures are not being conducted because information from visual inspections provides sufficiently detailed status information.

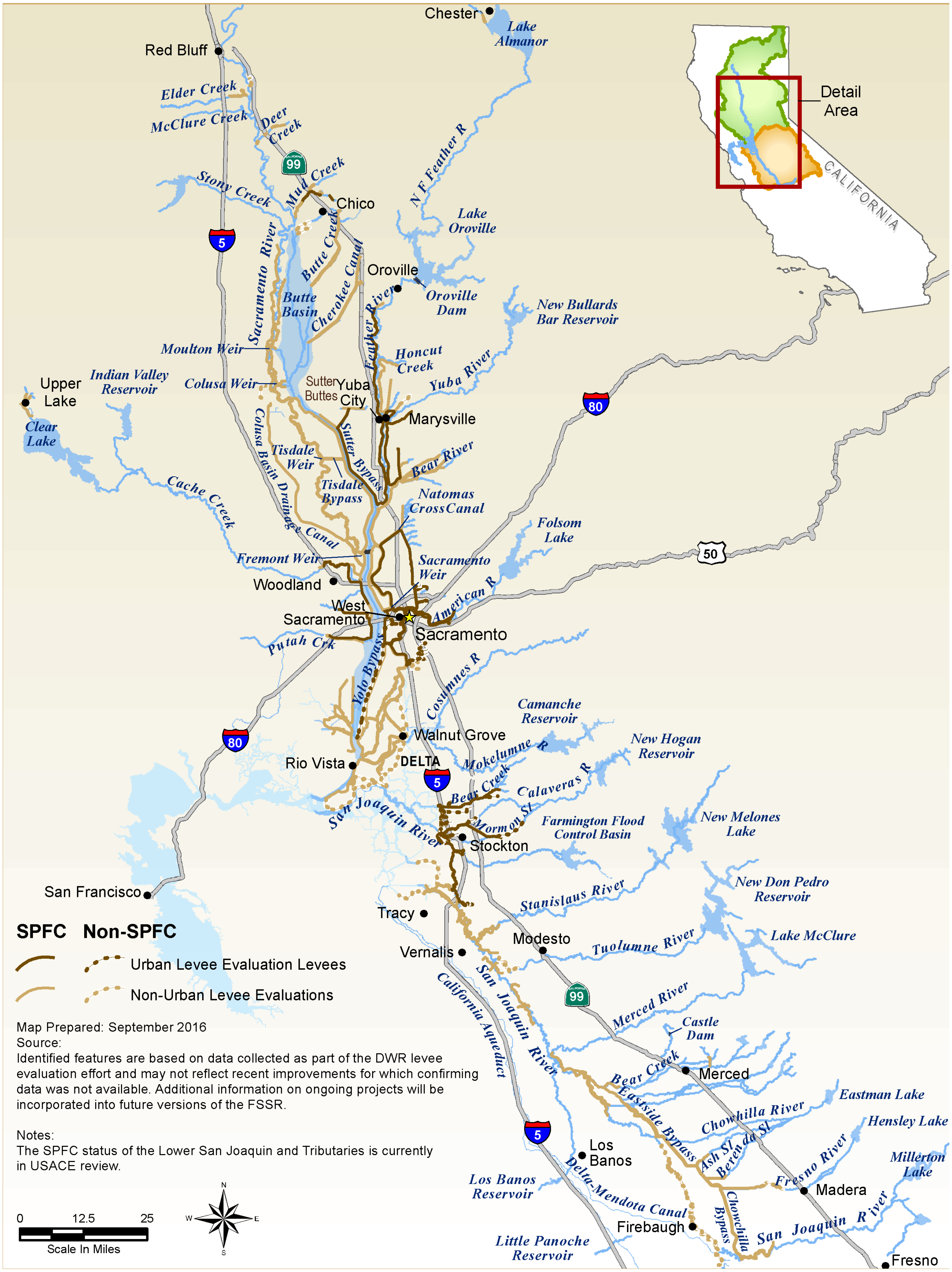
Geotechnical Evaluations

As part of developing the CVFPP, DWR evaluated geotechnical hazards associated with levee failure in areas where levees protect urban and nonurban areas, as generally defined by Proposition 1E. The DWR Levee Evaluations Program is evaluating approximately 2,000 miles of SPFC levees and appurtenant non-SPFC levees in the Central Valley (approximately 1,580 miles of SPFC levees and 420 miles of non-SPFC levees). The program is divided into ULE and NULE, each of which is further divided into multiple study areas.

ULE evaluated approximately 350 miles of SPFC levees and approximately 120 miles of appurtenant non-SPFC levees protecting areas with populations exceeding 10,000. NULE evaluated approximately 1,230 miles of SPFC levees and approximately 300 miles of appurtenant non-SPFC levees in the Central Valley in areas with a population of less than 10,000. Levees evaluated by ULE and NULE are shown in Figure 2-1. Appurtenant non-SPFC levees are defined as those that abut SPFC levees, whose performance may affect the performance of SPFC levees, or that provide flood risk reduction benefits to areas also being protected by SPFC features.

The goals of ULE and NULE were to determine whether levees meet defined geotechnical criteria and, where needed, to identify repair and improvement measures, including cost estimates, to meet desired geotechnical criteria. The methodology, criteria and results from ULE and NULE are described in more detail in Section 3.3.

Tables 2-2 and 2-3 summarize key deliverables of ULE and NULE, respectively.



SPFC **Non-SPFC**

Urban Levee Evaluation Levees

Non-Urban Levee Evaluations

Map Prepared: September 2016
Source:
Identified features are based on data collected as part of the DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional information on ongoing projects will be incorporated into future versions of the FSSR.

Notes:
The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 2-1. Levees Evaluated by ULE and NULE

Table 2-2. ULE Deliverables

Project Deliverable	Description
Data Technical Review Memorandum	Assesses known and unknown geotechnical conditions in a study area and documents levee performance during past flood events
Preliminary Geotechnical Data Report	Presents results of initial field exploration and laboratory testing programs
Preliminary Geotechnical Evaluation Report	Identifies locations for supplemental evaluation through preliminary geotechnical analyses of seepage and stability conditions
Supplemental Geotechnical Data Report	Presents results of the supplemental field and laboratory exploration program that addresses any significant data gaps
Final Geotechnical Evaluation Report	Presents additional analysis to evaluate levee conditions based on available data and to provide conceptual remediation and costs

Table 2-3. NULE Deliverables

Project Deliverable	Description
Data Technical Review Memorandum	Assesses known and unknown geotechnical conditions in a study area and documents levee performance during past flood events
Geotechnical Assessment Report	Presents results of comprehensive data collection and preliminary levee assessment
Remedial Alternatives and Cost Estimating Report	Identifies conceptual repair and improvement alternatives and cost estimates to correct identified problems
Geotechnical Data Report	Presents results of field and laboratory exploration and testing
Geotechnical Overview Report	Presents additional analysis to evaluate levee conditions based on available data and provides conceptual repair and improvement costs

Levee Penetrations Evaluation

A levee penetration is typically a conduit to allow storm water drainage, sewer, water (such as irrigation, drinking water, or waste), gas, electric, petroleum, chemicals or other utilities crossing through or under the levee without affecting its primary function of flood control. There are more than 7,500 levee penetrations crossing SPFC levees. Most of these penetrations were installed when the levees were built and more were added as encroachments for over many years. Most of these penetrations have outlasted their design life of 35 to 50 years. These aging penetrations pose a considerable hazard to the levee integrity. DWR, under its Utility Crossings Inspection Program (UCIP) has inventoried these penetrations using available databases from the Board for encroachment permits, as-built plans for SPFC levees, O&M manuals, levee logs, and data from USACE's periodic inspections.

Based on the flood risk associated with the levee penetrations, there is a need to prioritize and evaluate the levee penetrations. DWR, under the Flood System Repair Project (FSRP), is planning to evaluate levee penetrations using video inspection to prioritize rehabilitation needs.

Penetrations that fall into the critical category will be considered for repair/replacement in partnership with the maintaining agencies under FSRP. The list of critical penetrations will be used to determine funding priorities; the updated list of critical penetrations is also shared with the DWR Flood Operations Center to assist in flood preparedness activities.

Hydraulic Evaluations

Hydraulic evaluations help identify and evaluate SPFC channel conveyance capacity conditions. As mentioned, DWR conducted hydraulic evaluations through the CVFED Program and continues to through the DWR Maintenance Program. Recently, DWR completed hydraulic evaluations through the channel capacity evaluation effort for the Sacramento and San Joaquin river systems, which is the main source of informational updates in the 2017 FSSR.

The channel capacity evaluation effort for the Sacramento and San Joaquin river systems provided the primary source of SPFC channel conveyance capacity data. The analysis program included gathering updated topographic, hydrologic, and hydraulic data, which was used to develop mathematical models to understand flood risk and evaluate channel conveyance capacity in the Central Valley on a systemwide level. Systemwide modeling generally characterizes impedance to flow, but is not designed to evaluate subtle changes in channels as a result of sediment deposition, in-channel vegetation, and/or other obstruction in channels. Once complete, these models will support evaluation and design of potential actions and projects to help manage flood risk. The information gathered during the channel capacity evaluation effort for the Sacramento and San Joaquin river systems was used to evaluate channel status in Section 5.1 of this 2017 FSSR.

The models were supported by additional physical data, analytical tools, and work products, including the following:

- Detailed aerial photographs and topographic data for a major portion of the Central Valley
- Detailed light detection and ranging (LiDAR) topographic data for the majority of SPFC levees
- Bathymetry surveys and surveys of bridges and structures for major rivers and tributaries in the Central Valley
- Supplemental field surveys of structures, stream gages, and channel cross sections for major rivers and tributaries in the Central Valley

Project-specific modeling conducted by the DWR Maintenance Program provided a second source of channel conveyance capacity data in the Sacramento River watershed, and is presented in Section 5.1. DWR is responsible for maintaining channel flow capacity for Sacramento River Flood Control Project channels, and for performing channel-specific maintenance activities identified in the USACE O&M manuals, including channel clearance, if required to maintain design flow capacity. The goal of the DWR Maintenance Program is to accurately characterize Sacramento River Flood Control Project channel hydraulics, and to identify needed maintenance activities for each of the Sacramento River Flood Control Project channels and bypasses prescribed in California Water Code Section 8361. Project-specific models help systematically prioritize channel vegetation management and sediment management activities by determining whether a channel capacity inadequacy is driven by sedimentation, channel vegetation, subsidence, flow constrictions caused by bridge crossings, or other factors. Where available, project-specific hydraulic modeling results from projects conducted by other agencies were used as the source of channel conveyance capacity data.

For systemwide and project-specific modeling, characterization of a channel's current conveyance capacity and identification of channels requiring maintenance are also derived from a hydraulic investigation that includes development of a one-dimensional HEC-RAS hydraulic model. Inadequacies in a channel's conveyance capacity are determined based on design flows and stages depicted in the 1957 USACE Levee and Channel Profiles, File Number 50-10-334 (1957 Design Profile). For channels not covered in the Sacramento River watershed by the 1957 Design Profile and those in the San Joaquin River watershed, the as-constructed plans were used to determine the design stage.

The DWR Maintenance Program is developing Channel Evaluation Reports for each of the Sacramento River Flood Control Project channels and bypasses prescribed in California Water Code Section 8361. The reports present an evaluated channel's current conveyance capacity, identify locations needing maintenance, and develop channel management plans to safely convey the design flow without encroaching on specified stage and level of freeboard.

Note that there are some differences between how DWR is currently evaluating existing channel conveyance capacities as part of both the channel capacity evaluation effort for the Sacramento and San Joaquin river systems, the Program and its Maintenance Program, and how USACE evaluates channel conveyance capacities for planning studies. DWR defines the maximum safe channel capacity using a deterministic approach to delineate floodplains along the Sacramento and San Joaquin rivers, and evaluating specific maintenance projects. This approach considers remaining freeboard and levee stability with respect to geotechnical conditions. USACE uses a risk-based approach that assigns a probability of failure based on defined levee stability parameters and estimated frequency of river stages.

To evaluate baseline hydraulic conditions for the 2017 CVFPP Update, DWR used a risk-based approach more similar to USACE's approach. Risk-based approaches are better for evaluating flood risk at a systemwide scale, but their accuracy depends on having sufficient geotechnical and hydrologic data to support the analysis. Some supporting efforts such as the Sacramento and San Joaquin River Basin-Wide Feasibility Studies (BWFSs) used a deterministic approach to evaluate hydraulic performance along with a robust multi-benefit analysis.

2.2.2 USACE Evaluations

USACE is also conducting numerous site-specific evaluations in support of flood control civil works projects in the Central Valley. Examples of recent projects include the following:

- American River Watershed Common Features Project
- Marysville Ring Levee Project
- South Sacramento County Streams Project
- West Sacramento Levee Improvement Program
- Natomas Levee Improvement Program
- Lower San Joaquin Feasibility Study
- Water Resources Development Act 1996/1999 Levee Improvement Sites

In addition to site-specific evaluation studies, USACE (in sponsorship with the Board) has conducted a comprehensive system evaluation for the Sacramento River Flood Control Project. Contents of the technical studies conducted for each phase of the system evaluation are summarized in Table 2-4.

Table 2-4. Sacramento River Flood Control System Evaluation Technical Studies

Technical Study	Description
Historical Levee Embankment Problem Areas	Locations of levee breaks, seepage, boils, sinkholes, slope failures, erosion damage
Levee Crown Surveys	Levee crown elevations
Cross Section Surveys	Comparison of existing cross sections with original design and construction cross sections
Design Water Surface Profiles	Comparison of levee crown elevations with design water surface profiles
February 1986 High Water Mark Profiles	Comparison of February 1986 high water mark profile with design water-surface profile
Hydrology	Discharge-frequency relationships, rating curves, assessment of ability of channels to convey design flow within design water surface elevation
Geotechnical	Soil sample analysis, review of soil maps and aerial photographs, slope stability analysis, and assessment of potential for damage due to seepage and piping
Design Freeboard	Levee reaches with inadequate design freeboard
Design Flow	Locations of design flow inadequacies
Level of Flood Protection	Recurrence intervals for February 1986 peak flood stages based on engineering and geotechnical considerations
Economics	Flooded areas (floodplains), and estimated flood damages

The Sacramento River Flood Control System Evaluation was conducted by USACE from 1988 to 1995; resulting evaluation reports are listed in Table 2-5.

Table 2-5. Sacramento River Flood Control System Evaluation Reports

Phase	Report Title	Month/Year
1	Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Sacramento Urban Area	May 1988
2	Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Marysville/Yuba City Area	January 1990
3	Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Mid-Valley Area	December 1991
4	Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Lower Sacramento Area	September 1993
5	Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Upper Sacramento Area	May 1995

Following the evaluations listed in Table 2-5, USACE and the Board constructed projects for each of the five areas to remediate identified problem locations and restore levees to design standards, while addressing seepage. Where levees did not meet design standards and problems did not result from lack of maintenance, levee remediation projects were proposed after evaluation. Remediation that could be economically justified was conducted, but some identified problem locations were left unremediated if remediation could not be economically justified. Also, work was performed according to design criteria at the time, which, in some cases, were less stringent than current design criteria.

Additional information on levee conditions after the Sacramento Flood Control System Evaluation is included in Section 4.0.

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3.0 Flood Risk in Sacramento and San Joaquin River Watersheds

SPFC levees along the Sacramento and San Joaquin rivers and their tributaries reduce the frequency of flooding on lands along these rivers. Since their construction, these levees and associated facilities have helped promote public safety and prevent billions of dollars of flood-related damages. However, portions of these levees have failed occasionally, resulting in significant property damage and loss of life. In addition, new development behind the levees places more lives and property in areas that face flood hazards, leading to higher flood risk.

Opposite sides of a river reach can have different flood risks because of different consequences of failure

This section presents a general overview of flood risk within the Sacramento and San Joaquin river watersheds. For the CVFPP, flood risk is defined as the long-term average consequences of flood inundation within an identified area given a specified climate condition, land use condition, and flood management system (existing or planned) in place. The consequences may be direct or indirect economic cost, loss of life, environmental impact, or other specified measures of flood effect. Flood risk is a function of flood hazard,[6] loading,[7] exposure,[8] and consequences. Elements of flood hazard, loading, exposure, and consequences include hydrology, hydraulics, levee performance (or fragility) curves, and economic and life safety consequences, which are discussed in the CVFPP and supporting documentation. As described in this 2017 FSSR, “hazard” refers specifically to geotechnical hazard when discussed in relation to the hazard assessments performed by ULE and NULE. The geotechnical hazard data presented are used to meet the FSSR legislative requirement related to the risk of levee failure (Section 1.1) and to develop levee performance curves for evaluating exposure for the baseline condition in the CVFPP. Therefore, ULE and NULE data related to risk of levee failure in this 2017 FSSR do not reflect the complete definition of flood risk, which, as mentioned, includes hydrology, hydraulics, levee performance curves, and economic or life safety consequences of flooding.

Levee performance for ULE was evaluated against hazard classifications relative to established levee design criteria. Levee performance for NULE was evaluated as hazard categories, which

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[6] Flood hazard is defined by FEMA as any flood event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption, or other loss. Flood hazard is a function of hydrology and hydraulics (e.g., rising or rapidly flowing water in a channel).

[7] In the context of flood risk, loading describes the frequency and magnitude of flooding. It is commonly described with a discharge-frequency function that identifies the probability that discharge at a specified location will exceed a specified value.

[8] Exposure is a description or measure of the relationship between inherent flood hazard and the consequences of flooding. Exposure is related to the performance of levees.

are qualitative indicators of the potential for levee failure. ULE and NULE assessments contained in this 2017 FSSR represent the completed analysis of levee conditions as of May 2016.

3.1 Flood Risk

Many Californians, especially those in deep floodplains in the Central Valley, face a significant risk of harm and damage caused by floods. Facilities of the SPFC play an important role in public safety and protection of property. This FSSR is one of several ways DWR in which improving the understanding of the severity of flood risks among those who live and work in areas protected by SPFC facilities.

Levees with the highest likelihood of failure do not necessarily present the greatest risks to the public. The consequences that could occur if a levee fails are an important component of flood risk. Therefore, floods in urban areas typically pose the greatest risks because of the large number of people that could be harmed and the value of the properties that could be damaged. Areas with greater populations will generally also have greater economic consequences.

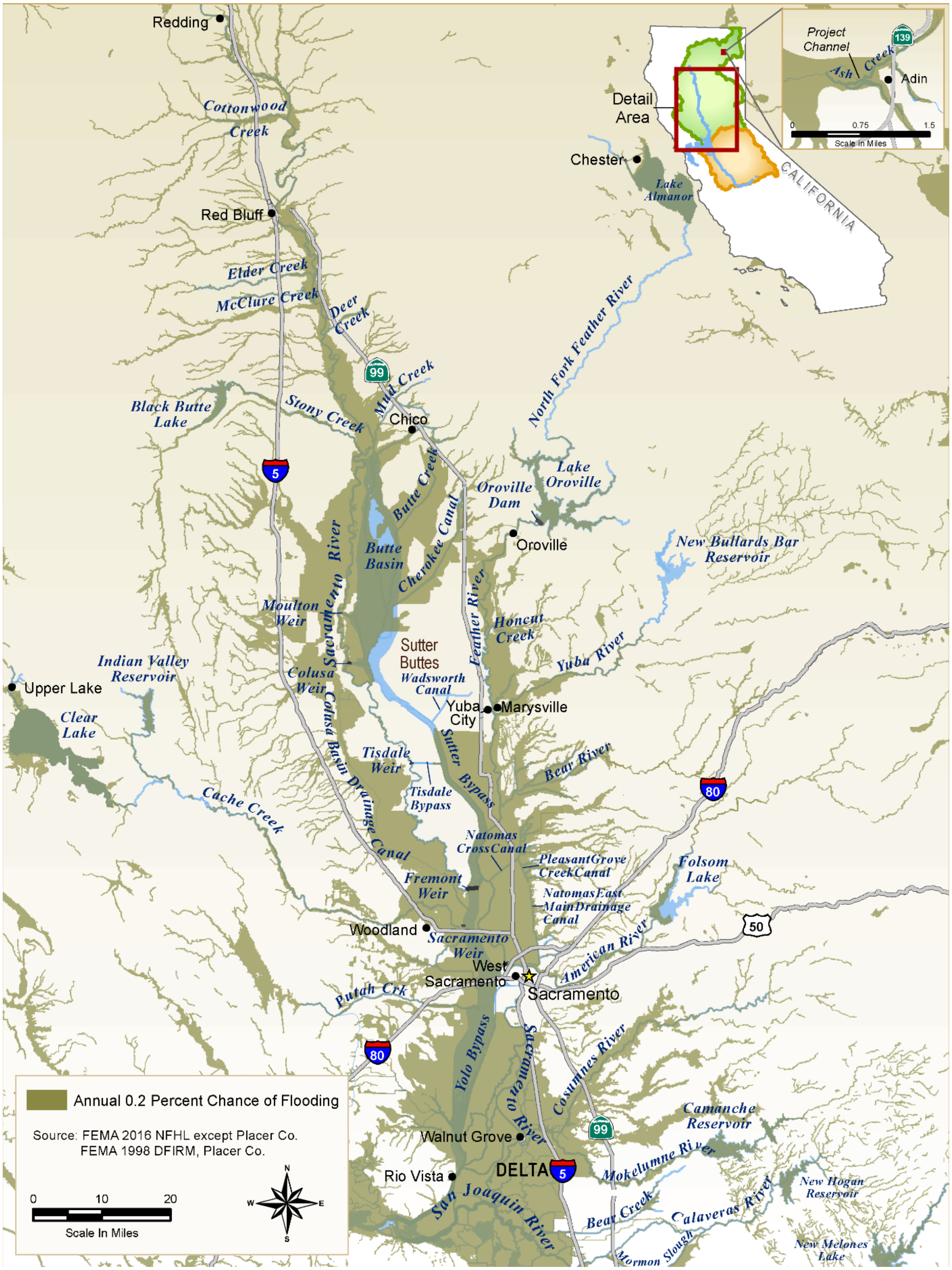
Regardless of how well flood facilities are designed, constructed, maintained, and operated, there is always a residual chance of failure. Improvements to existing flood facilities can reduce the probability of flooding, but not eliminate it.

Figures 3-1 and 3-2 show FEMA floodplains in the Sacramento River watershed and San Joaquin River watershed that have a 0.2 percent (or 1 in 500) chance or greater of flooding in any year (FEMA, 1996). Although larger areas can be inundated during more extreme floods, the maps indicate areas that are vulnerable to floods.

Levee stability concerns

For the 2017 CVFPP Update, basin-wide life safety and flood damage estimates have been updated based on current physical conditions and model refinements. It is expected that annual life loss in the Sacramento River basin may average approximately 66 people per year. In the San Joaquin River basin, annual life loss are expected to average nearly 149 people per year.

Estimates of basin-wide flood economic damages in the Central Valley were developed and documented for the first time in the December 2002 Sacramento and San Joaquin River Basins California Comprehensive Study Interim Report (USACE and DWR, 2002). These damages included estimated losses to structures, their contents, agricultural crops, and several other damage categories. They were presented as expected annual damages which represents long-term average annual flood damage for a given area under all possible flood events. DWR updated and adapted the systemwide economic damage model to estimate sytemwide life safety as part of the 2012 CVFPP.



Source: FEMA 2016 NFHL except Placer Co.
FEMA 1998 DFIRM, Placer Co.

Figure 3-1. FEMA Floodplains with Annual 0.2 Percent Chance of Flooding in the Sacramento River Watershed

Figure 3-2. FEMA Floodplains with Annual 0.2 Percent Chance of Flooding in the San Joaquin River Watershed

3.2 Factors That Influence Flood Risk

Uses of SPFC facilities have changed since the first federal project authorization. Originally, flood management in the Sacramento River watershed was closely tied to management and transport of mining debris generated in upstream mountain and foothill areas. Channels were designed to flush out and move mining debris downstream to keep the channels open for navigation and to convey floodwater. While this legacy system has generally worked well to prevent flooding, it was never intended to serve the multiple purposes the public expects now, such as flood protection for rapidly developing floodplains, long-term sustainability, natural resource preservation, water supply, and recreational use.

Factors related to the physical condition of SPFC facilities are described in three broad categories: levee status factors, channel status factors, and flood control structure status factors.

3.2.1 Levee Status Factors

Levee problems are evaluated in the FSSR according to the following status factors:

- **Inadequate Levee Geometry (Levee Geometry Check)** – Levee crown elevations that are too low, crown widths that are too narrow, and levee side slopes that are too steep can reduce levee stability and lead to failure.

- **Seepage** – Seepage under a levee foundation or through a levee can reduce levee stability and lead to failure.

- **Structural Instability** – Slides, sloughs, slope depressions or bulges can reduce levee stability and lead to failure.

- **Erosion** – Levee and bank erosion can directly reduce levee cross sections and shorten seepage paths, leading to failure.

- **Settlement** – Levee settlement or land subsidence over years can result in levee crown elevations lower than designed, reducing freeboard or causing water to overtop a levee.

- **Penetrations** – Irrigation and drainage pipes, utilities, and other structures through levees may create seepage paths. Seepage along the penetrations, or through deteriorating penetrations, could wash away levee material and lead to failure. Lack of positive closure devices on pipes penetrating levees can also lead to localized flooding.

- **Levee Vegetation** – Vegetation on levees can interfere with floodfighting efforts and maintenance by reducing visibility and accessibility. The extent that levee vegetation impacts levee integrity is the subject of ongoing research.

- **Rodent Damage** – Burrowing animals can create holes in levees that can create seepage paths and lead to levee failure.

- **Encroachments** – Encroachments (such as debris, fences, and structures) on SPFC facilities can interfere with floodfighting efforts and maintenance and, in some cases, reduce levee stability, which can lead to levee failure.

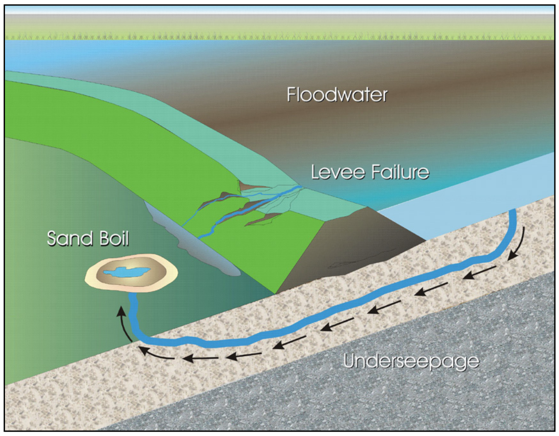
3.2.2 Channel Status Factors

Some SPFC channels may have insufficient capacities to safely convey design flood flows because of the following factors:

- **Inadequate Channel Conveyance Capacity** – Channels can have lower than designed flow capacity because of insufficient levee height or obstructions. Insufficient levee height can reduce the effective cross-sectional flow area. Similarly, obstructions such as bridges, sediment deposits, pilings, docks, marinas, and increased channel roughness from vegetation can also reduce the effective cross-sectional flow area and increase water levels, leading to levee overtopping.

- **Channel Vegetation** – Vegetation can decrease channel capacity, and vegetative debris can collect at bridges and other in-channel structures, restricting and redirecting flow and lead to levee overtopping.

- **Channel Sedimentation** – Deposits of sediment carried by floodwaters can reduce the cross-sectional areas of flood channels, leading to levee overtopping.



Levee underseepage

3.2.3 Flood Control Structure Status Factors

The SPFC relies on successful operation of the following flood control structures:

- **Hydraulic Structures** – Weirs, drainage structures, control structures, diversion structures, drop structures, outlet or outflow structures, and siphons/intakes must be maintained so that they serve their design purpose.

- **Pumping Plants** – Pumping plants must be maintained so that they serve their design purpose.

- **Bridges** – Bridges must be maintained so that they serve their design purpose and do not restrict flows through channels.

3.3 Risk of Levee Failure

As mentioned, the DWR Levee Evaluations Program evaluated approximately 1,700 miles of SPFC levees and appurtenant non-SPFC levees in the Central Valley (approximately 1,400 miles of SPFC levees and 300 miles of appurtenant non-SPFC levees). The goals of ULE and NULE are to determine whether levees meet defined geotechnical criteria and, where needed, to identify repair and improvement measures, including cost estimates, to meet desired geotechnical criteria. Therefore, ULE and NULE assess hazards related to levee performance but do not provide a complete analysis of exposure or evaluate consequences of levee failure. The remaining elements of risk of levee failure for urban and nonurban levees, particularly levee performance curves and life safety and economic consequences, are being analyzed in the CVFPP.

As mentioned, levee performance for ULE was evaluated as hazard classifications relative to established levee design criteria. For NULE, levee performance was evaluated as hazard categories that show potential for levee failure. This approach was selected because the extent of the NULE study area was considerably greater than that of ULE, making it difficult to conduct the same level of field explorations and geotechnical data collection performed for ULE levees.

The following subsections provide more detailed information about the methodologies used to assess levee conditions under ULE and NULE, descriptions of the criteria that define hazard, and a summary of overall hazard of levee segments based on those criteria. This information is used in Section 4.0 to discuss levee conditions in more detail, based on individual status factors.

3.3.1 Urban Levee Evaluations – Methodology and Results

ULE evaluated approximately 320 miles of SPFC and 110 miles of appurtenant non-SPFC urban levees, protecting populations greater than 10,000. SPFC levees evaluated by ULE are shown in Figure 2-1.

ULE Approach

The overall strategy for DWR urban levee evaluations was impacted by two legislative and executive actions. New California Government Code sections added by Senate Bill 5 in 2007 required cities and counties within the Sacramento-San Joaquin Valley to provide, require, or demonstrate an urban level of flood protection for areas located within a FEMA floodplain that are urban or urbanizing before making certain land use decisions. An urban level of flood protection is defined as the level of protection necessary to withstand a flood event that has a 1 in 200 chance of occurring in any given year. In addition, the Governor’s 2006 Emergency Order S-18-06 fast-tracked ULE, with the goal of quickly identifying significant levee deficiencies that required repair.

ULE study areas were generally based on urban areas identified by Proposition 1E. [9] Proposition 1E defined an urban area as “any contiguous area in which more than 10,000 residents are

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[9] The definition of urban area in Proposition 1E differs from the definition provided in new California Government Code sections added by Senate Bill 5 in 2007. California Government Code Section 65007 defines an urban area as a "developed area in the Sacramento-San Joaquin Valley in which there are 10,000 residents or more." Therefore, ULE study areas may include a mix of urban and nonurban areas, as defined by California Government Code Section 65007, because some urban levees protect adjacent nonurban areas. Furthermore, some urbanizing areas protected by levees are being evaluated under NULE. An urbanizing area is defined in California Government

protected by Project Levees." This means that a project levee failure could flood the residences of more than 10,000 people in a single area. Levees providing protection to areas meeting this definition of an existing urban area were considered urban levees under ULE.

ULE evaluations were implemented in five major steps:

1. **Historical Data Collection** – Available levee data were collected, and State, USACE, and local experts were interviewed. Geomorphology studies were also conducted. For each study area, results were documented in a Technical Review Memorandum, which generally assessed known conditions and potential conditions suggested by available data, as well as levee performance during past flood events. Based on the results of historical data collection, Steps 2 and 3 may not have been performed in study areas that underwent significant investigation by USACE and/or local stakeholders; in this case, screening efforts proceeded to Steps 4 and 5.
2. **Initial Field Investigation** – Initial field exploration (limited to the levee crown) and laboratory testing programs were conducted and documented in a Phase 1 Geotechnical Data Report.
3. **Preliminary Analysis** – Each ULE study area was then broken into separate segments based on similar geologic and geotechnical conditions identified in the Technical Review Memorandums and Phase 1 Geotechnical Data Reports; preliminary geotechnical analyses of seepage and stability were conducted; and areas for supplemental evaluation were identified based on those analyses.
4. **Supplemental Investigation** – Based on the results of analyses performed during Step 3, and particularly its correlation with past performance, a supplemental field and laboratory exploration program was developed and implemented to address any significant data gaps. This work was documented in a Supplemental Geotechnical Data Report.
5. **Final Screening** – Additional analyses were conducted to evaluate levee conditions based on available data. As necessary, conceptual remediation and corresponding costs were identified on a segment-by-segment basis for each study area. Analyses and conceptual remediation were documented in a Geotechnical Evaluation Report.

During the preliminary analysis phase and the final screening phase, analyses were conducted to assess the performance of each ULE levee segment against performance criteria for the following four failure modes:

- Freeboard
- Levee geometry
- Steady-state seepage (reported as seepage)
- Steady-state stability (reported as structural instability)

Code Section 65007 as a "developed area or an area outside a developed area in the Sacramento-San Joaquin Valley that is planned or anticipated to have 10,000 residents or more within the next 10 years. For more information, also see California Government Code Sections 65007, 65302.9, 65860.1, 65865.5, 65962, and 66474.5.

The performance criteria for categories used in these assessments are based on the USACE Engineer Manual (EM) 1110-2-1913, Design and Construction of Levees (USACE, 2000) and DWR's Urban Levee Design Criteria (ULDC) (DWR, 2012a). Although freeboard is not technically a failure mode, it was a performance criterion identified in the above documents and, therefore, the ULE approach considered freeboard in assessing overall hazard classifications.

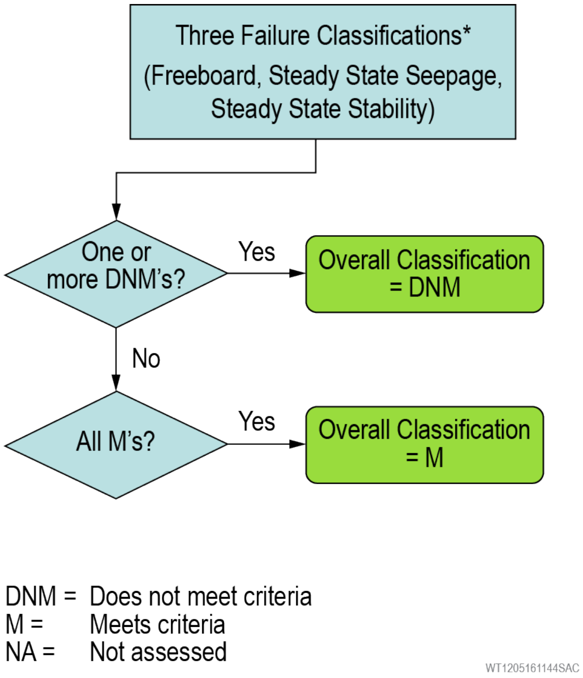
Based on these analyses, each ULE levee segment was assigned one of the following hazard classifications for each potential failure mode:

- **Meets Criteria (M)** – Levees in this classification met or exceeded criteria.
- **Does Not Meet Criteria (DNM)** – Levees in this classification did not meet criteria. These levees required the most immediate attention (i.e., repair or replacement).
- **Not Assessed (NA)** – There was no evaluation completed for a given levee segment or the information obtained was not sufficient to complete a determination of "Meets Criteria," or "Does Not Meet Criteria."

ULE results were developed in two phases. The first phase presented preliminary criteria-based results for freeboard, levee geometry, seepage, and stability for the 1955 and 1957 design water surfaces as presented in this 2017 FSSR (USACE, 1955b; USACE, 1957a; 1957b). In December 2012, the second phase presented criteria-based results for the 200-year surface water profile, and final results for the 1955 and 1957 design water surfaces.

ULE hazard classifications for levee geometry, seepage, and stability are discussed in detail in Section 4.0. ULE freeboard classifications are described in Appendix A, Section A-2.

An overall classification was assigned to each ULE levee segment based on the collective performance for freeboard, steady state seepage, and steady-state stability, as shown in Figure 3-3. For example, each ULE levee segment was assigned a hazard classification for each of the failure modes. If any of the hazard classifications was DNM, then the overall hazard classification was DNM. If all of the hazard classifications were M, then the overall hazard classification was M. Levee geometry classification was not included in the overall classification because the ULE geometry check was performed as a first step in an evaluation of erosion hazard that is not yet complete. It should be noted that an NA rating was used to classify freeboard (levee geometry) for a small amout of levees which did not have sufficient data to determine an M or DNM rating.



Note:
* Levee geometry classification was not included in the overall classification because the ULE geometry check was performed as a first step in an evaluation of erosion hazards that is not yet complete.
Key:
DNM = Does Not Meet Criteria
M = Meets Criteria

Figure 3-3. ULE Overall Levee Segment Hazard Classification Decision Tree

Levee geometry, burrowing animal damage, penetrations, settlement, encroachments, and levee vegetation data were not considered in the assignment of ULE overall hazard classifications.

The following section describes the overall hazard classifications for various levee segments in ULE study areas.

Summary of Overall Hazard Classification

The preliminary analysis phase is complete, and hazard classifications were assigned to ULE levee segments, segregated into the following 14 study areas (north to south):

- Sutter
- Marysville
- Reclamation District 784
- Woodland
- Davis
- Natomas
- Natomas East Main Drainage Canal
- West Sacramento
- American River
- Sacramento River (east levee Sacramento River from American River to Freeport)
- Bear Creek (San Joaquin County)

- Calaveras River
- Reclamation District 404
- Reclamation District 17

Geotechnical Evaluation Reports were prepared for all 14 study areas. Table 3-1 summarizes the overall hazard classifications for 317 miles of ULE SPFC levees. As described above, ULE non-SPFC levee data were not available for inclusion in this 2017 FSSR.

Table 3-1. Summary of ULE Overall Hazard Classification

	Overall Hazard Classification		
	Meets Criteria (M)	Does Not Meet Criteria (DNM)	Total
ULE Levees in the Sacramento River and San Joaquin River Watersheds			
ULE SPFC Levee Miles Evaluated	131	186	317
Percent of ULE SPFC Levees Evaluated	41%	59%	100%

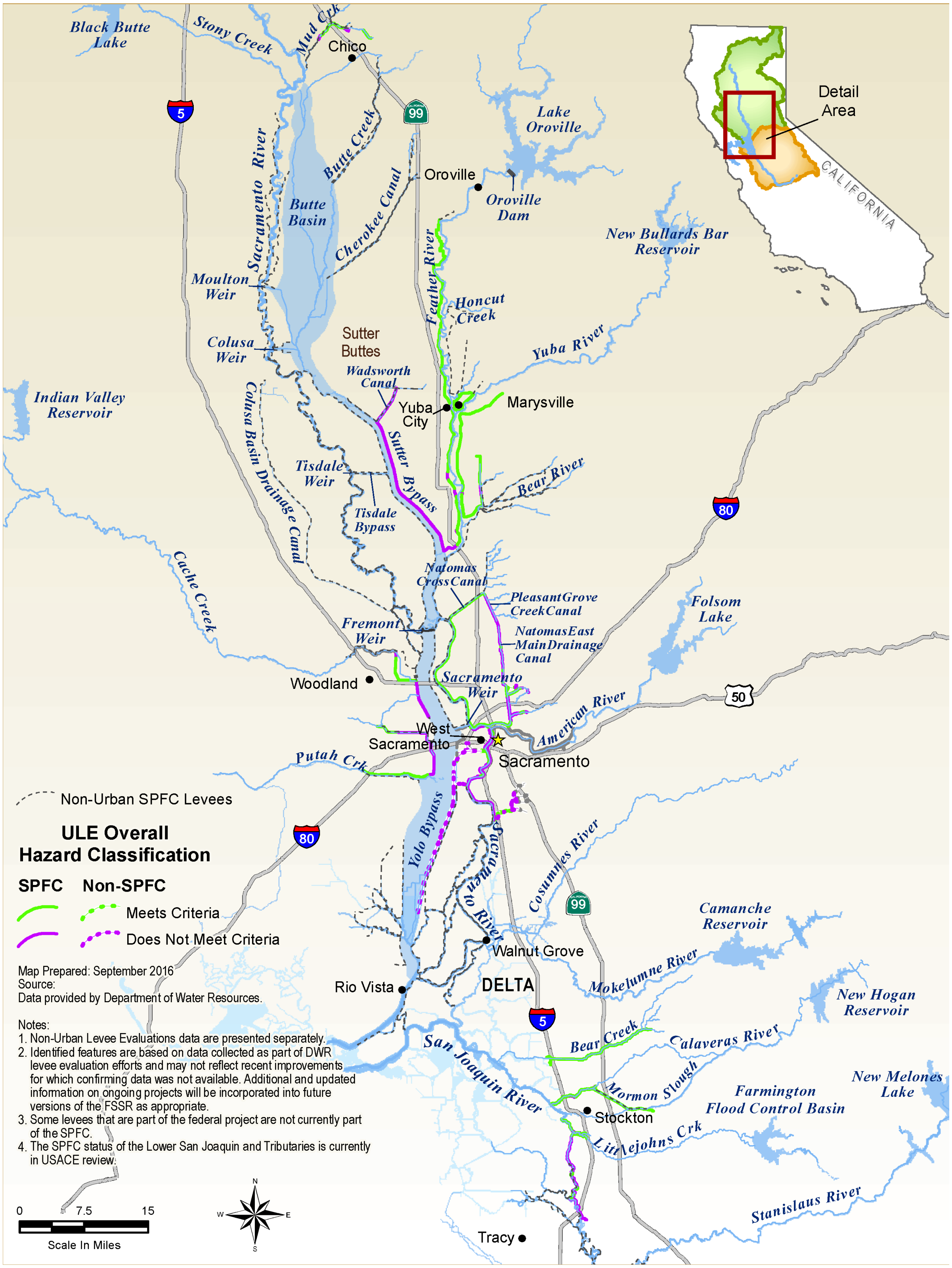
Key:
SPFC = State Plan of Flood Control
ULE = Urban Levee Evaluations

Overall, almost half of ULE SPFC levees met criteria (hazard classification M) at the design water surface elevation. In some urban areas, substantial segments of levees met criteria, but also have substantial segments of levees that did not meet criteria (hazard classification DNM). For example, portions of the urban levees surrounding the Natomas area of Sacramento have been recently improved to meet criteria. Other portions of the Natomas urban levees are planned for improvement but currently do not meet criteria. Approximately half of ULE SPFC levees do not meet criteria at the design water surface elevation. These levees require the most immediate attention for repair or replacement. Levees in Yuba City, Marysville, Davis/Woodland, and Lathrop mostly do not meet criteria. Although the evaluations did not take into account improvements for the Marysville ring levee that are currently under construction, once these improvements are complete and data are available, results will be incorporated into future updates to this 2017 FSSR.

Overall hazard classifications of SPFC ULE levee segments in the Sacramento and San Joaquin river watersheds are shown in Figure 3-4.

3.3.2 Nonurban Levee Evaluations – Methodology and Results

NULE encompassed approximately 1,100 miles of SPFC nonurban levees and 190 miles of appurtenant non-SPFC nonurban levees. Nonurban SPFC and non-SPFC levees included in the evaluations are shown in Figure 2-1.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Non-Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 3-4. ULE Overall Hazard Classifications in the Sacramento and San Joaquin River Watersheds

NULE Approach

NULE levees were evaluated using a two-phase approach. Phase 1 consisted of nonintrusive studies for SPFC and appurtenant non-SPFC nonurban levees using readily available data supported by surface geomorphology studies. NULE levees were evaluated via systematic, consistent, repeatable analysis that correlated geotechnical data with levee performance history, and were not relative to any design criteria. Phase 2 consisted of supplemental studies, which were performed for selected nonurban levees, and involved field investigations combined with more detailed geotechnical analyses. To facilitate evaluation, NULE levees were divided into segments along reclamation district, levee district, and maintenance area boundaries; key physical features (e.g., bypasses, tributaries); and channel sides (i.e., left bank/right bank). NULE Phase 1 included evaluating the following different types of data:

- Existing subsurface information
- Historical performance
- Historical records from the National Archives in San Bruno, California, and selected local sources such as university libraries
- Records available at State agencies and data contained in the California Levee Database
- Data (including interviews) obtained from maintaining agencies and other local levee agencies
- Geologic and geomorphic conditions (including existing Quaternary geologic mapping)
- Surface mapping
- Vintage aerial photography (stereo-paired imagery collected in 1937)
- Vintage topographic maps (1907 through 1915)
- LiDAR topographic surveys
- Assessment water surface elevations (where available, the 1955/1957 design water surface profiles were used for Phase 1 assessments)
- Animal burrow persistence data
- Levee penetrations logs
- Maintenance ratings

These data were managed by DWR in a project-specific electronic database to systematically catalog project data and provide quick and efficient access during levee hazard assessments. The data were used to develop levee construction and performance histories, evaluate levee geometry and other features potentially impacting geotechnical performance, evaluate levees and levee foundation composition and associated conditions, and assess geotechnical levee hazard indicators.

To facilitate a consistent assessment approach, NULE developed a Levee Assessment Tool. The Levee Assessment Tool is a systematic, repeatable process for assessing levee hazard indicators and past levee performance. Details about Levee Assessment Tool development and implementation are in the technical memorandum, Levee Assessment Tool (URS, 2010). The assessment teams used geometric, geologic, and historical performance data from GIS to select a cross section for analysis within each NULE levee segment. The Levee Assessment Tool was used at this cross section to assess the entire segment. Each NULE levee segment was evaluated at the assessment water surface elevation. Where available, the 1955/57 design water surface elevations, as defined by the 1953 Memorandum of Understanding (USACE and Board, 1953), were used as the assessment water surface elevation. In the absence of 1955/57 design water surface elevations, the assessment water surface elevation was based on freeboard requirements for each levee segment (i.e., generally 3 feet below the levee crown).

In addition to the geotechnical hazard assessments, other assessments were performed based on levee geometry and water surface elevation. These included a freeboard check and a geometry check comparison to the levee design prism. Collected data also were reviewed to identify occurrences of levee overtopping.

Four geotechnical failure modes were evaluated by NULE. Note that NULE geotechnical failure modes differ from ULE’s four failure modes because of different methodology. NULE geotechnical failure modes include the following:

- Underseepage
- Through seepage
- Slope stability (reported as structural instability)
- Erosion

Based on Phase 1 evaluations, each levee segment was assigned one of the following categories for each geotechnical failure mode:

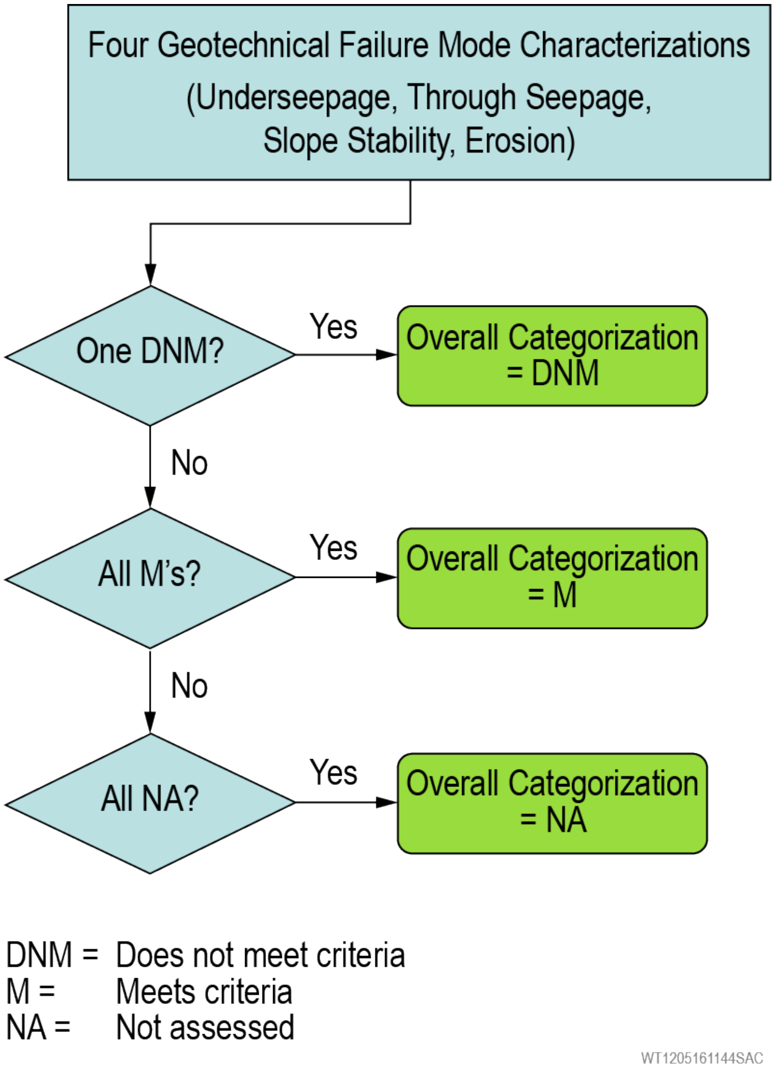
- **Meets Criteria (M)** – When water reaches the assessment water surface elevation, the performance criteria for the geotechnical failure modes is met.

- **Does Not Meet (DNM)** – When water reaches the assessment water surface elevation, the performance criteria for the geotechnical failure modes is not met.

- **Not Assessed (NA)** – There was no evaluation completed for a given levee segment or the information obtained was not sufficient to complete a determination of “Meets Criteria,” or “Does Not Meet Criteria.”

An overall hazard category was assigned to each NULE levee segment, considering the collective performance for the geotechnical failure modes, including underseepage, through seepage, slope stability, and erosion, as shown in Figure 3-5.

For example, each NULE levee segment was assigned a hazard classification for each of the failure modes. If any of the hazard classifications was DNM, then the overall hazard classification was DNM. If all of the hazard classifications were M, then the overall hazard classification was M. If in any given project area, there was not sufficient data to warrant a determination with respect to the four geotechnical failure modes, then the overall hazard classification was NA.



Key:
LD = Lacking Sufficient Data

Figure 3-5. NULE Overall Levee Segment Hazard Categorization Decision Tree

Penetrations and burrowing animal damage data included in this 2017 FSSR were considered during assignment of through seepage hazard categories. Levee geometry check, settlement, encroachment, and levee vegetation data were not considered during assignment of NULE overall hazard categories, because NULE focused on geotechnical evaluations.

Summary of Overall Hazard Categorization

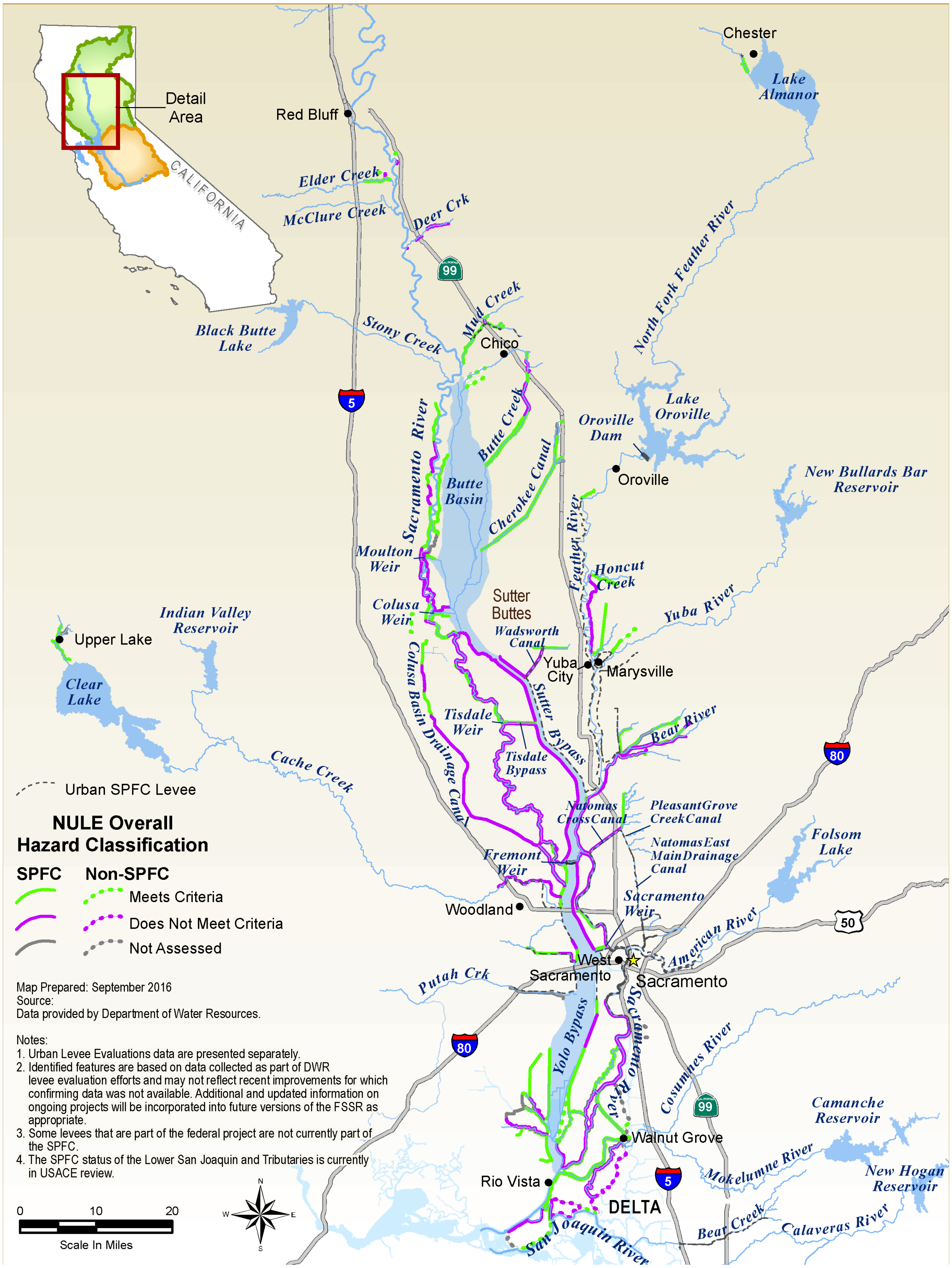
Table 3-2 summarizes NULE overall hazard categorizations for SPFC levees and non-SPFC levees. The total number of NULE levee miles assigned to each NULE hazard category (Meets Criteria, Does Not Meet Criteria, and Not Assessed) are summarized for the North NULE (Sacramento River watershed) and South NULE (San Joaquin River watershed) study areas, and both study areas combined, as described below.

The Geotechnical Assessment Report, North NULE Study Area (DWR, 2011a) documents study methodology and results for NULE levees in the Sacramento River watershed. The overall hazard categorizations for SPFC and non-SPFC levees in the North NULE Study Area are shown in Figure 3-6. The Geotechnical Assessment Report, South NULE Study Area (DWR, 2011b), documents study methodology and results for NULE levees in the San Joaquin River watershed. The overall hazard categorizations for SPFC and non-SPFC levees in the South NULE Study Area are shown in Figure 3-7.

Table 3-2. Summary of NULE Overall Hazard Categorization

NULE Study Area	Overall Hazard Category			Total
	Meets Criteria	Does Not Meet Criteria	Not Assessed	
North NULE Study Area (Sacramento River Watershed)				
North NULE SPFC Levee Miles Evaluated	376	406	33	816
Percentage of North NULE SPFC Levees Evaluated	46%	50%	4%	100%
North NULE Non-SPFC Levee Miles Evaluated	41	24	19	84
Percentage of North NULE Non-SPFC Levees Evaluated	49%	27%	24%	100%
South NULE Study Area (San Joaquin River Watershed)				
South NULE SPFC Levee Miles Evaluated	93	191	-	398
Percentage of South NULE SPFC Levees Evaluated	23%	48%	-	100%
South NULE Non-SPFC Levee Miles Evaluated	44	45	15	104
Percentage of South NULE Non-SPFC Levees Evaluated	42%	43%	15%	100%
Combined North and South NULE Study Areas				
NULE SPFC Levee Miles Evaluated	469	597	33	1,099
Percentage of NULE SPFC Levees Evaluated	43%	54%	3%	100%
NULE Non-SPFC Levee Miles Evaluated	85	69	34	188
Percentage of NULE Non-SPFC Levees Evaluated	45%	37%	18%	100%

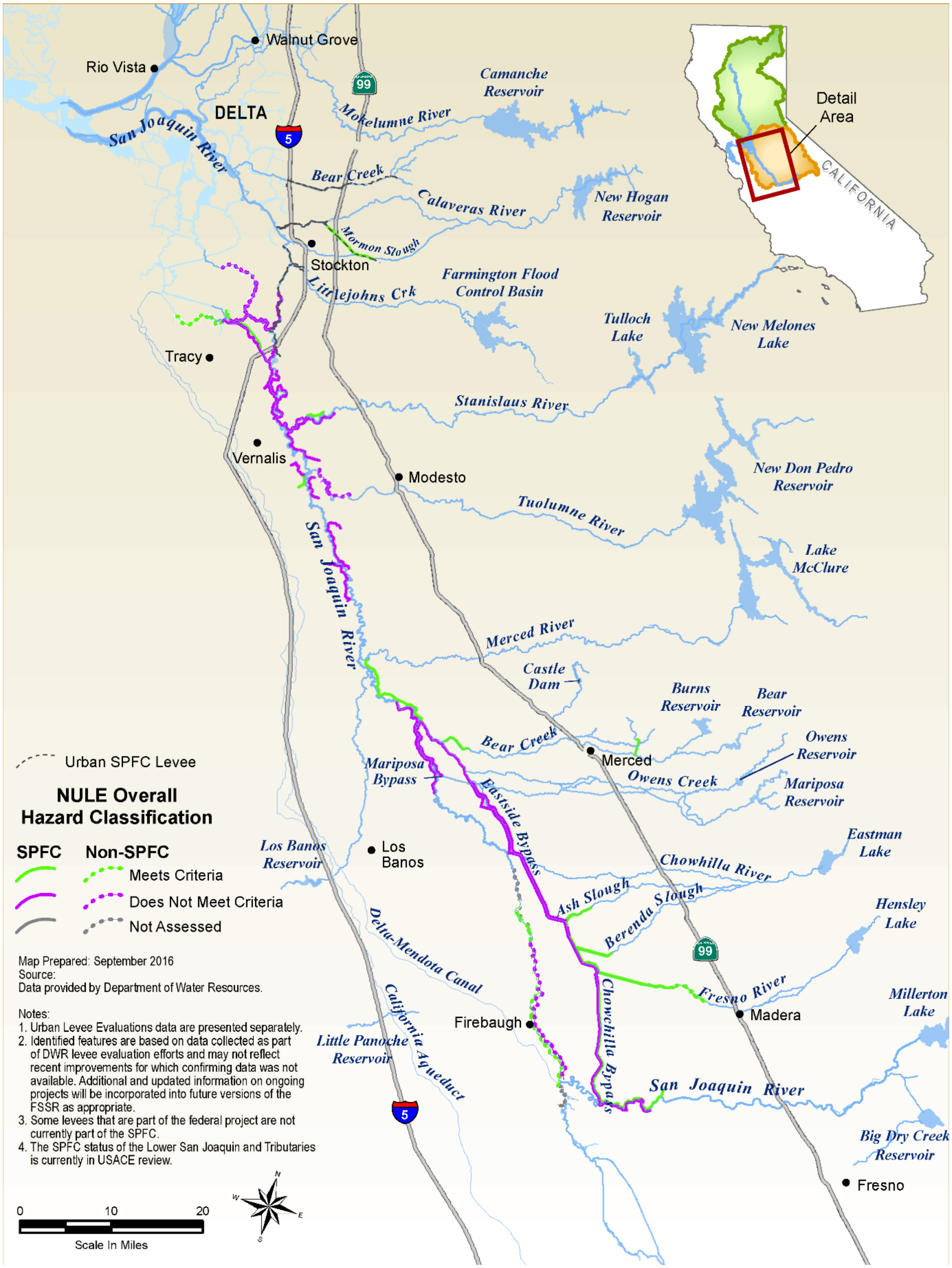
Overall, just under three-fifths (54 percent) of NULE SPFC levees were categorized as “Does Not Meet Criteria” at the assessment water surface elevation. Just over two-fifths (43 percent) of NULE SPFC levees were categorized as “Meets Criteria”. In the Sacramento River watershed, NULE SPFC levees categorized as “Meets Criteria” are primarily along tributaries; none of the NULE SPFC levees along the Sacramento River were categorized as “Meets Criteria.” In the San Joaquin River watershed, NULE levees categorized as “Meets Criteria” were primarily along tributaries, with some short segments along the San Joaquin River.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 3-6. North NULE Study Area Overall Hazard Categorizations in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 3-7. South NULE Study Area Overall Hazard Categorizations in the San Joaquin River Watershed

3.3.3 Urban and Nonurban Levee Evaluations Methodology Summary

Figure 3-8 summarizes the process for developing the ULE overall hazard classification and NULE overall hazard categorization.

ULE levee segments were evaluated for four failure modes (freeboard, levee geometry, steady state seepage, steady state stability) based on DWR and USACE design criteria. Results from three of the four failure modes (freeboard, steady state seepage, and steady state stability) were considered when assigning a ULE overall hazard classification using the ULE Overall Levee Segment Hazard Classification Decision Tree (see Figure 3-3). For NULE, levee segments were evaluated for four geotechnical failure modes (underseepage, through seepage, slope stability, and erosion) based on the potential for levee failure at the assessment water surface elevation. The results from all four geotechnical failure modes were considered when assigning a NULE overall hazard category using the NULE Overall Levee Segment Hazard Categorization Decision Tree (see Figure 3-5).

As mentioned, levee geometry was considered during the ULE overall hazard classifications as a proxy for assessing the erosion failure mode because ULE erosion analyses have been completed and the collected geometry data represents the initial step in that analysis. Freeboard was considered during ULE overall hazard classifications, but not during NULE overall hazard categorizations, because the ULE approach compared collected data against current design criteria, which included freeboard criteria. The NULE approach, however, was based on a qualitative assessment of the potential for levee failure.

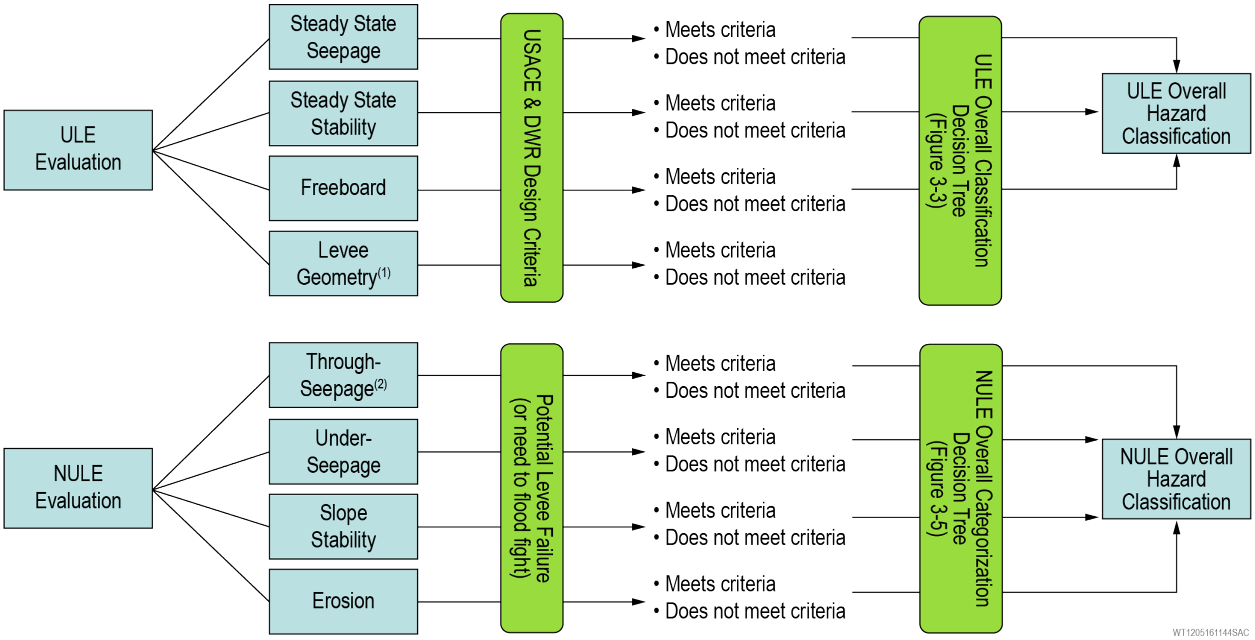


Figure 3-8. Process for ULE Overall Hazard Classifications and NULE Overall Hazard Categorizations

4.0 Levee Status

SPFC levees have provided tremendous benefits to public safety and protection of property in the Central Valley since facilities were originally constructed. However, the current physical condition of SPFC levees has been adversely affected by the following: pervious sandy and gravelly layers in levees or levee foundations, early twentieth-century construction practices, lack of modern design criteria at time of design, levee alignments that exacerbate erosion, facility obsolescence, deferred maintenance, and other items unrelated to flood management, such as groundwater extraction and land use.

Many levees were constructed by local interests before federal and State authorization of the flood control projects, using material dredged from adjacent rivers. These materials, which may be soft or contain coarse, permeable sediments subject to underseepage, were then placed on untreated ground in the late nineteenth and early twentieth centuries. Subsequently, some of these levees were improved while others remained as constructed by local interests, when adopted into the federal flood control project and SPFC in the mid-twentieth century.

Even with regular maintenance, and capital improvement projects that have been implemented through the late twentieth century and early twenty-first century, the foundations and core of many levees (some more than 100 years old) are of unknown integrity. Thousands of penetrations have been placed under and through levees over the years, many of which remain unpermitted and potentially threatening to levee integrity. Also, groundwater extraction and some land use practices have caused land subsidence that adversely affects levee foundations and crown elevations. In addition, insufficient SPFC property rights and easements for flood management adversely affect maintenance in some locations. Finally, funding limitations have placed further strain on SPFC levees by causing some maintenance to be deferred.

After the 1986 flood in the Central Valley, USACE Sacramento District was authorized to conduct a comprehensive analysis of the long-term integrity of the Sacramento River Flood Control Project in partnership with the Board; this analysis was called the Sacramento River Flood Control System Evaluation (USACE, 1988; USACE, 1990; USACE, 1991; USACE, 1993; USACE, 1995). USACE Sacramento District determined that some reaches of levee had structural problems which, if not remediated, would put thousands of people in the Central Valley at risk who rely on levees for their safety and protection of their property from floods. Key results of the Sacramento River Flood Control System Evaluation analysis were as follows:

- High flood flows in 1986 severely stressed levees to the point that a levee failure in Linda (and several other near failures) occurred, demonstrating that the SPFC facilities could not be assumed to be as reliable as previously thought.
- Investigations found that several reaches of levee had geotechnical problems, mostly relating to stability, seepage, and piping potential (described in Section 4.2). These conditions stemmed from the time of construction and were present when the facilities were turned over by USACE to the Board for O&M. Remedial levee reconstructions and improvements are required for the SPFC to function at its original intended design level.

- Levee maintenance evaluations found that, while there were some minor instances of poor maintenance, inadequate maintenance was not the primary cause of structural problems with the levees.

Since this analysis, USACE Sacramento District and the Board have reconstructed selected levee segments protecting urban and rural areas in locations where estimated benefits exceeded the estimated reconstruction costs, as summarized in Table 4-1. Capital improvement projects and extraordinary O&M have also been conducted by maintaining agencies.

Table 4-1. Approximate Length of Levees Reconstructed After Sacramento River Flood Control System Evaluation

Study Area	Approximate Total Length of Levees Reconstructed
Sacramento Urban Area	32 miles
Marysville/Yuba City Area	26.4 miles
Mid-Valley Area	18.3 miles
Lower Sacramento River Area	0.4 miles
Upper Sacramento River Area	3.8 miles
Total	**80.9 miles**

Flood events in 1995 and 1997 reemphasized that the levee system needed additional levee reconstructions and improvements to achieve the desired level of flood protection. As a result of poor performance with respect to levee underseepage during the 1997 flood, USACE Sacramento District convened a panel of experts that recommended modifications to USACE levee underseepage evaluations and design. The USACE Sacramento District adopted most of the panel's recommendations, and issued new guidance in Engineer Technical Letter (ETL) 1110-2-569, Design Guidance for Underseepage (USACE, 2005) and the Geotechnical Levee Practice Standard Operating Procedures for the USACE Sacramento District (USACE, 2008).

Per this new guidance, it became evident that a new USACE system evaluation was needed to evaluate levee underseepage according to new USACE criteria. As discussed in Section 3.3, DWR has been conducting levee evaluations of levee underseepage (and other failure modes) against current criteria in coordination with USACE and other partner agencies since 2007 for ULE. These efforts, building on the findings of previous analyses by USACE, have advanced additional levee improvement projects in several areasand supported development of the CVFPP and the 2017 CVFPP Update.

This section describes current SPFC levee conditions using a combination of data from the DWR Levee Evaluations Program, DWR inspection data, and a DWR Animal Burrowing Persistence Study (DWR, 2009b). As part of the systemwide analysis, information about appurtenant non-SPFC levees is also included in data provided by NULE. Table 4-2 lists levee status factors considered for this 2017 FSSR, data used, and location of the data in this 2017 FSSR. In addition to the ULE and NULE hazard assessments described in Sections 3 and 4, ULE and NULE collected and cataloged historical seepage, erosion, structural instability and settlement occurrences in a GIS database; much of this information is in Appendix A. For example, ULE/NULE hazard assessment data for seepage is included in Section 4.2, and historical seepage occurrences and annual inspection results for seepage are included in Appendix A, Section A-3.

Table 4-2. Levee Status Factors Data Summary

Levee Status Factor	Data in FSSR	Location of Data in FSSR	Considered in ULE Overall Hazard Classification (Section 3.0)	Considered in NULE Overall Hazard Categorization (Section 3.0)
Levee Geometry Check • Levee Geometry Check • Freeboard	ULE/NULE Geometry Check	Section 4.1	No	No
	ULE/NULE Freeboard Check	Appendix A, Section A-2	Yes	No
Seepage[1]	ULE/NULE Hazard Assessments	Section 4.2	Yes	Yes
	ULE/NULE Historical Seepage Occurrences	Appendix A, Section A-3	Yes	Yes
	DWR Annual Inspections	Appendix A, Section A-3	No	No
Structural Instability	ULE/NULE Hazard Assessments	Section 4.3	Yes	Yes
	ULE/NULE Historical Levee Slope Instability Occurrences	Appendix A, Section A-4	Yes	Yes
	DWR Annual Inspections	Appendix A, Section A-4	No	No
Erosion	NULE Hazard Assessment	Section 4.4	No	Yes
	ULE/NULE Historical Erosion Occurrences	Appendix A, Section A-5	No	Yes
	DWR Annual Inspections	Appendix A, Section A-5	No	No
Settlement	DWR Annual Inspections	Section 4.5	No	No
	ULE/NULE Historical Sinkhole and Subsidence Occurrences	Appendix A, Section A-6	No	No
Penetrations	UCIP Levee Penetration Locations	Section 4.6	No	Yes
Levee Vegetation	DWR Annual Inspections	Section 4.7	No	No
Rodent Damage	Animal Burrowing Persistence Study	Section 4.8	No	Yes
	DWR Annual Inspections	Appendix A, Section A-9	No	No
Encroachments	DWR Annual Inspections	Section 4.9	No	No

Notes:

[1] NULE hazard assessment includes underseepage and through seepage. ULE hazard assessment includes a steady state seepage analysis of both underseepage and through seepage.

Key:

DWR = California Department of Water Resources	FSSR = Flood System Status Report
NULE = Nonurban Levee Evaluations Project	ULE = Urban Levee Evaluations Project

Levee status factors considered in assignment of ULE overall hazard categories included freeboard, seepage, and slope stability. Levee status factors considered in assignment of NULE overall hazard categories included seepage (both underseepage and through seepage), slope stability, and erosion. ULE and NULE evaluated other factors, as described, but overall categorizations were based on evaluation of these factors.

Supporting information related to levee status is included in Appendix A, Section A-1, that encompasses multiple levee status factors:

- Historical levee breach and overtopping locations, to show where levees have failed in the past because of any combination of factors.

- Local projects under DWR's Early Implementation Program and USACE/Board projects locations, to show current projects in planning, design, or implementation phases. Early Implementation Program projects are projects that are proceeding in advance of the CVFPP. USACE/Board projects are projects underway that the Board participates in and cost-shares with USACE that reconstruct or improve SPFC facilities in the Sacramento and San Joaquin river watersheds.

- Description of other modifications to SPFC facilities for which the State has not provided nonfederal assurances of cooperation to the federal government, or that are not yet authorized by the Board for acceptance into the SPFC.

4.1 Levee Geometry Check

Although physical processes such as erosion may alter levee geometry, many SPFC levees do not comply with current minimum geometry criteria because levee geometry criteria used at the time of construction varied. Before congressional authorization of flood control projects in the Central Valley, levees were constructed to variable geometry criteria by local interests. After congressional authorization, USACE improved levee geometry in some locations before turning flood control projects over to the Board for O&M. Minimum levee geometry criteria have previously been specified by various USACE and State guidance documents, such as USACE's EM 1110-2-1913, Design and Construction of Levees (USACE, 2000), Title 23 Waters Division 1, of the Central Valley Flood Protection Board California Code of Regulations, the 1953 Memorandum of Understanding Respecting the Sacramento River Flood Control Project (USACE and Board, 1953) and USACE Sacramento District's Reference Paper 10LO, Geotechnical Levee Practice Standard Operating Procedures (USACE, 2008).

Not all existing SPFC levees have been constructed or improved to levee geometry design criteria as specified in USACE and State guidance documents. For example, the 1953 Memorandum of Understanding Respecting the Sacramento River Flood Control Project (only applicable for Sacramento River Flood Control Project improvements authorized by the Flood Control Acts of 1917, 1928, 1937, and 1941 – also known as the "Old Project") lists 55.6 miles of levees that were exempted from meeting levee geometry design criteria. In addition, the 1953 Memorandum of Understanding acknowledged that the levee design criteria were not fully implemented for the "Major and Minor Tributary Project" Sacramento River Flood Control Project improvements authorized by the Flood Control Acts of 1944 and 1950. The Standard O&M Manuals for both the Sacramento River Flood Control Project and Lower San Joaquin River and Tributaries Project state that "some bypass levees and some river levees do not have the standard slopes or crown widths" (USACE, 1955a; USACE, 1959). Updates or exceptions to minimum levee geometry criteria are noted in as-constructed drawings attached to unit-specific O&M manuals, where available.

Furthermore, after levee construction, repeated occurrences of erosion, settlement (both localized settlement and regional settlement from the consolidation of underlying strata), and seepage have contributed, and continue to contribute, to changes in levee geometry that cannot be addressed by routine levee maintenance activities.

The ULDC (DWR, 2012a) includes criteria for urban levee geometry.

4.1.1 Status Evaluation Methodology

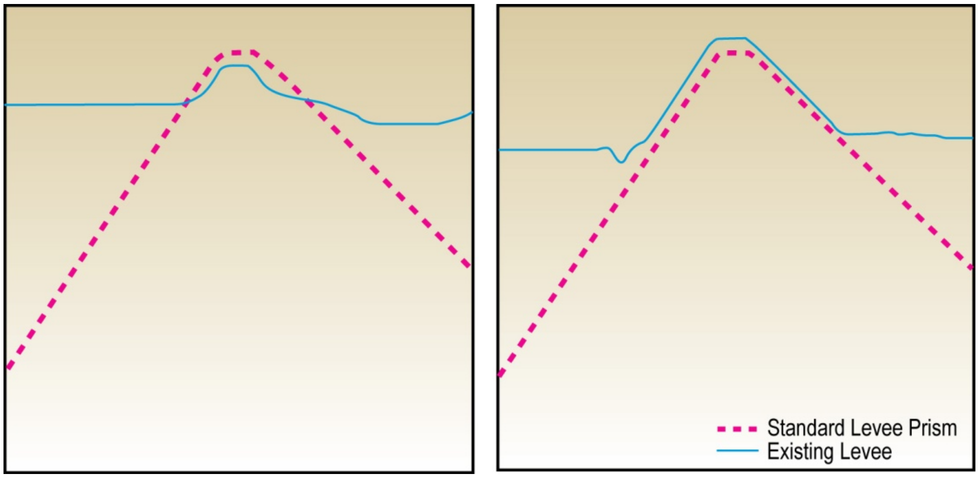
The DWR Levee Evaluations Program conducted a levee geometry check of ULE and NULE levees that compared existing levee geometry at regular cross section intervals with a standard levee design prism.

The standard levee design prism for the Sacramento River is based on the 1953 Memorandum of Understanding levee design criteria (USACE and Board, 1953). Unit-specific levee design geometry (levees exempted from the 1953 Memorandum of Understanding or constructed after 1951) was not accounted for as part of the evaluation. The standard levee design prism for the San Joaquin River is based on available design data, or a standard prism with a 12-foot wide crown, and waterside slopes with a 3 to 1 ratio, and landside slopes with a 2 to 1 ratio, when design data were unavailable.

The standard levee design prism was plotted using GIS; the GIS plot was then overlain on levee topography derived from LiDAR survey data.

The check was performed at a cross section spacing of 500-foot intervals and 100-foot intervals for the Sacramento and San Joaquin river watersheds, respectively. LiDAR survey data were collected for ULE and NULE levees in 2007.

Figure 4-1 demonstrates a levee cross section that deviates from the standard design prism and a levee cross section that conforms to the standard levee design prism.



Levee Cross Section That Deviates from Standard Levee Design Prism

Levee Cross Section That Conforms to Standard Levee Design Prism

Figure 4-1. Levee Cross Section Geometry Check Illustrations

Urban Levee Evaluations Project

As mentioned, levee performance for ULE was evaluated against hazard classifications relative to established levee design criteria. For ULE, levee segments were evaluated to determine if cross sections met the standard levee design prism geometry criteria, and were presented in the following hazard classifications:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

ULE geometry check results were not considered in assignment of the ULE overall hazard classification shown in Figure 3-4.

Nonurban Levee Evaluations Project

For NULE, the percentage of a levee segment with an existing geometry smaller than the standard design prism was estimated and reported; this is the percentage of a levee that deviates from the standard design prism. For example, a levee with a 60 percent deviation from the standard levee design prism means that 60 percent of the levee segment was smaller than the standard levee design prism, meaning 60 percent of the levee segment did not meet levee geometry criteria.

The percent of levee deviating from the standard levee design prism was calculated through qualitative analysis on a cross section by cross section basis. The percentage of levee segment with existing geometry that did not fit within the standard levee design prism was estimated and reported. Levees with wide crowns could pass the levee geometry check even with slopes steeper than those indicated by the standard levee design prism. Analysts used engineering judgment to assess whether inadequacies indicated from GIS analysis were the result of true geometric inadequacy, misalignment of the design prism, and/or LiDAR-indicated levee centerline. For more information about the NULE geometry check, see the Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a and 2011b).

NULE geometry check results were not considered during the assignment of an NULE overall hazard categorization as shown in Figure 3-6 and Figure 3-7. Instead, other levee geometry parameters, such as the head-to-levee base-width ratio, levee height, and levee landside slope angle, were considered during assignment of NULE underseepage, through seepage and stability hazard categorizations. These categorizations in turn impacted NULE overall hazard categorizations as shown in Figure 3-6 and Figure 3-7.

4.1.2 Limitations of Status Evaluations

ULE levee geometry check results presented in this section represent findings of the first of a multitiered process being applied by DWR to assess levee geometry inadequacies and erosion hazards, the results of which have been incorporated into Geotechnical Evaluation Reports completed for individual ULE study areas (see Section 4.4.1 for more details). A levee geometry check was also completed which was intended to be used as an indicator of erosion. The results were noted as an imperfect indicator of erosion hazard. This imperfection was due to various factors in addition to erosion which could cause a levee to have inadequate levee geometry.

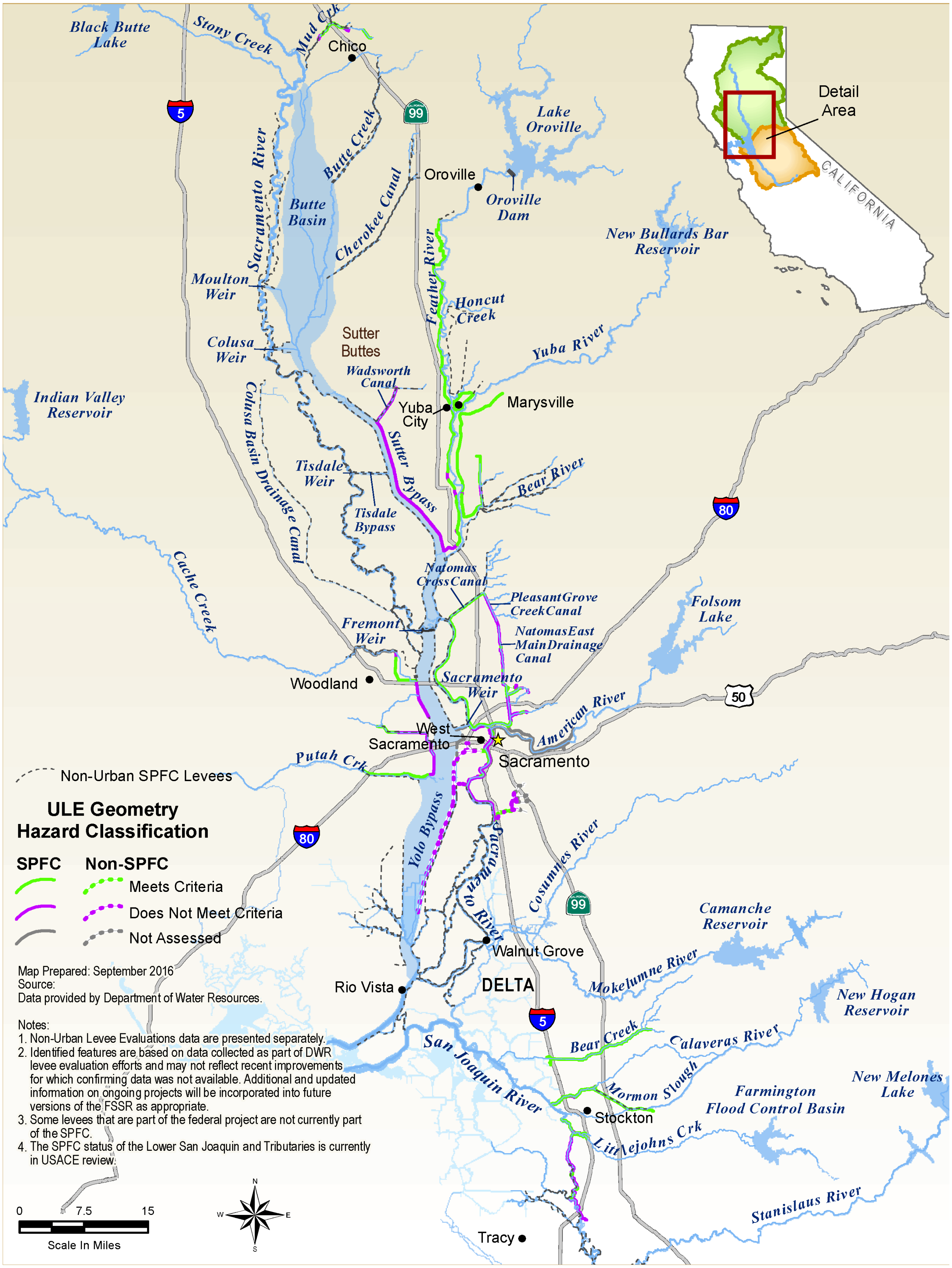
The levee geometry check presented in this 2017 FSSR was limited to a comparison between existing levee geometry and standard levee design prisms described in Section 4.1.1, and does not assess the cause of any deviations noted for ULE or NULE levees. While deviation from standard geometry may be caused by erosion, it also could reflect a levee that was not constructed to the standard levee design prism, or a levee that has degraded because of settlement or other post-construction events. The levee geometry check does not reflect any prior-approved deviations, such as updates or exceptions to minimum levee geometry standards noted in unit-specific O&M manuals. Unit-level evaluation of a levee's geometry based on its construction specifications was not part of this levee geometry check. Estimates of the extent of deviation from standards (depth or severity) are also not included in the FSSR for ULE or NULE levees. Because of the limitations above, ULE levee segments identified in Figure 4-2 as "Does Not Meet Criteria" warrant further assessment of potential erosion hazards and do not necessarily reflect the need for levee improvement.

4.1.3 Results of Status Evaluations

Results of the levee geometry check for ULE and NULE are summarized below. ULE and NULE levee freeboard check results, and additional information on recent levee remedial actions/improvements (including locations of levee raises, widening, and levee reconstructions), current and ongoing repairs/improvements, and ongoing actions to improve future evaluations of levee geometry are included in Appendix A, Section A-2.

Urban Levee Evaluations Project

Results of the geometry check for SPFC ULE levees are shown in Figure 4-2. The majority of SPFC ULE levees along the Feather River, American River, and Sacramento River north of the City of Sacramento were met standard levee design prism geometry criteria. Approximately one-third of SPFC ULE levees deviate from current standard levee design prism geometry. These levees were located along bypass features and associated tributaries to the west, and along the Sacramento River south of Sacramento. Geometry check results for SPFC ULE levees in the San Joaquin River watershed and elsewhere in the Sacramento River watershed varied.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Non-Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-2. ULE Levee Geometry Check

Nonurban Levee Evaluations Project

Geometry check results for NULE levees are shown in Figures 4-3 and 4-4. The percentages mapped are the percentage of each NULE levee segment that deviated from standard levee design prism geometry. Compliance with minimum levee geometry criteria varied across the Sacramento and San Joaquin river watersheds. Results suggest that the San Joaquin river watershed and Sacramento River have the highest percentage of levees that conform to standard levee design prism geometry. Further, levees along the bypasses and along the tributary streams to the Sacramento River in the northern Sacramento River watershed have the lowest percentage of NULE levee segments that conform to standard levee design prism geometry. Results elsewhere along NULE levees were variable.

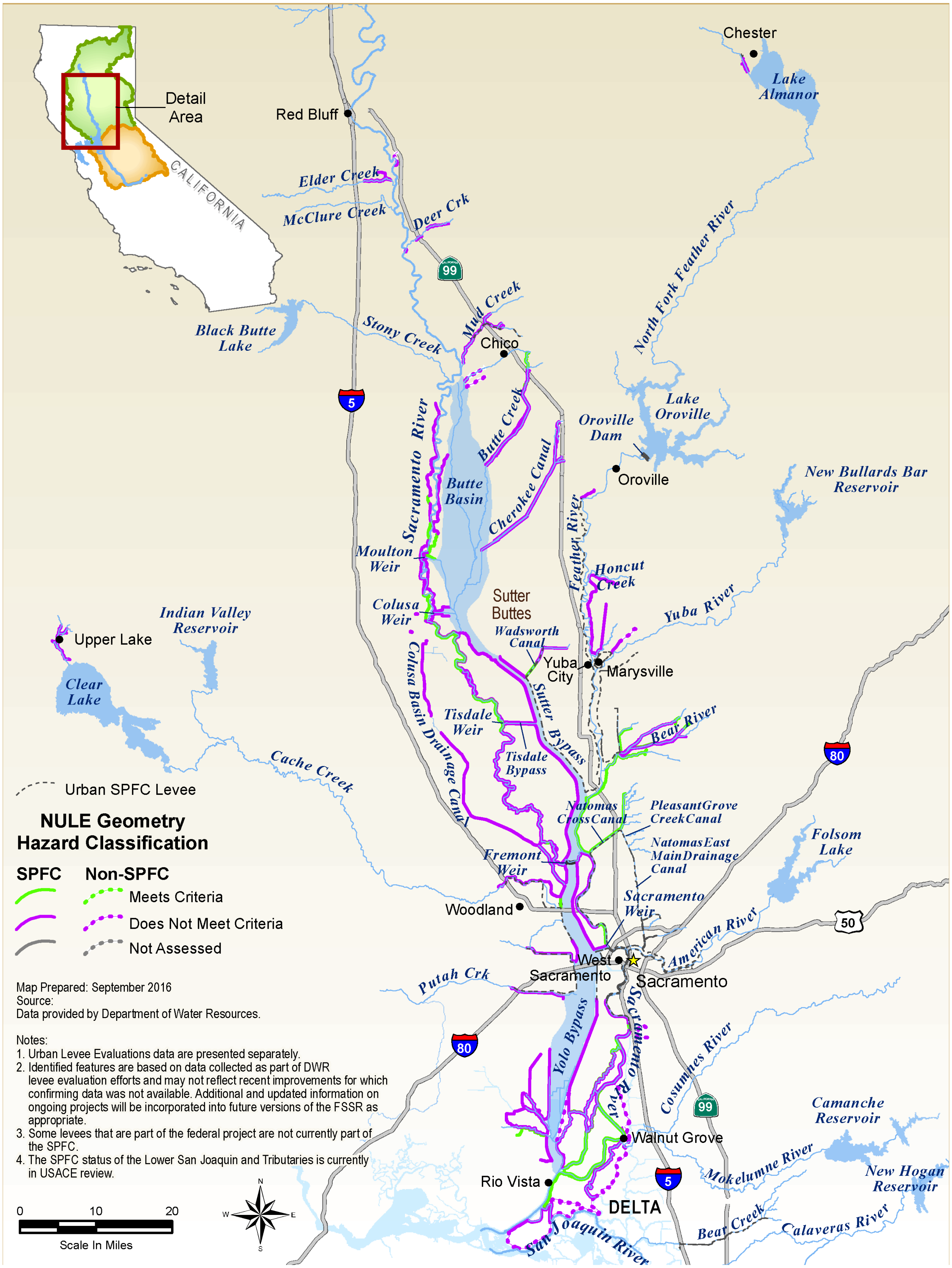
4.2 Seepage

Seepage problems for levee systems are commonly divided into two distinct categories: underseepage and through seepage. Underseepage occurs when permeable foundation material or native soils beneath the base of a levee present a pathway for water to move under a levee and exit at the surface near or beyond the landside levee toe. Through seepage occurs when water moves from a waterway through a levee. When water moving through or under the levee carries with it foundation soil or levee materials, piping action may result in settlement of the levee or erosion of the landside toe or slope and cause the levee to breach during high water.

Levee seepage is often associated with pervious sandy and gravelly layers in a levee or levee foundation, early twentieth-century construction practices, and lack of any seepage design criteria at the time of construction. Many SPFC levees were built by landowners and local entities in the late nineteenth century and early part of the twentieth century without benefit of current design criteria or construction practices. These levees were typically constructed without consideration for foundation stability, suitability of levee material, or placement procedures. Many levees were constructed using sandy materials and were placed on top of riverine deposits that often contained pervious sandy or gravelly layers. As a result, many SPFC levees are susceptible to underseepage or through seepage. A number of other factors may increase the potential for seepage, including the presence of erodible fill, animal burrows, or other penetrations that exit from the landside levee slope or foundation, potentially causing the levee to erode or degrade.

Engineering practices to address seepage have evolved significantly over time. USACE levee seepage design criteria and construction practices were originally developed to address through seepage only, but were revised after the 1950s to address growing concerns about underseepage. Therefore, many existing levees do not comply with current USACE levee underseepage criteria because the levees were constructed before the revised criteria were adopted. Conflicting guidance between old and new seepage design criteria has resulted in inconsistent levels of protection for different levee projects (USACE Sacramento District Levee Task Force, 2003).

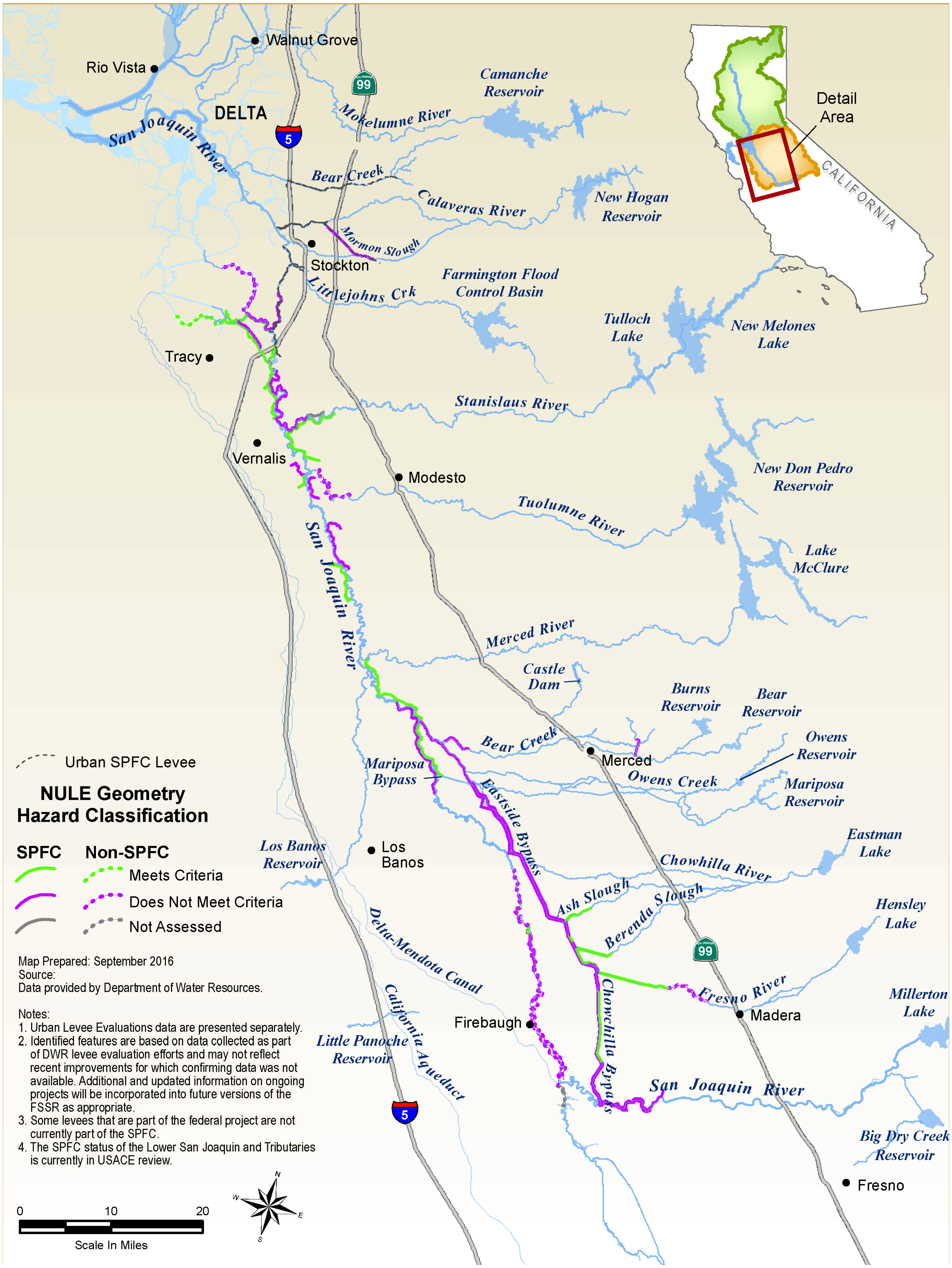
Most recently, USACE has been updating seepage criteria in EM 1110-2-1913, Design and Construction of Levees (USACE, 2000); further updates to USACE seepage criteria are expected. DWR's ULDC (DWR, 2012a) contains more rigorous seepage design criteria than the current USACE guidance. This is because USACE guidance applies to all levees, and the DWR ULDC (DWR, 2012a) only apply to levees protecting urban and urbanizing areas.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-3. NULE Levee Geometry Check in the Sacramento River Watershed



Urban SPFC Levee

NULE Geometry Hazard Classification

SPFC	Non-SPFC	
🟩	🟩	Meets Criteria
🟪	🟪	Does Not Meet Criteria
▬	▬	Not Assessed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-4. NULE Levee Geometry Check in the San Joaquin River Watershed

4.2.1 Status Evaluation Methodology

DWR used different methods to assess the potential for seepage for ULE and NULE, reflecting different scopes, objectives, and funding availability for the projects.

Urban Levee Evaluations Project

As mentioned, levee performance for ULE was evaluated against hazard classifications relative to established levee design criteria to assess seepage along ULE levees, DWR performed a quantitative analysis that assessed underseepage and through seepage concurrently. A steady state seepage computer model used for this effort (SEEP/W) incorporated existing and new geotechnical data and analyses from borings drilled at regular intervals along the entire urban levee system. The model estimates an exit gradient for underseepage at the design water surface elevation and allows assessment of potential through seepage conditions, which are then compared against accepted criteria, as specified in the USACE's EM 1110-2-1913, Design and Construction of Levees (USACE, 2000) and DWR's ULDC (DWR, 2012a).

ULE evaluations included assessing each ULE levee segment and assigning each segment to one of the following hazard classifications for steady state seepage:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

Nonurban Levee Evaluations Project

For NULE, levee performance was evaluated as hazard categories that show potential for levee failure. As part of NULE Phase 1, levee assessments were performed for underseepage and through seepage based on comparing available geologic and geotechnical data and documented performance records. Detailed methodology and results are in the Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a and 2011b).

NULE Phase 1 studies included assessing each NULE levee segment and assigning each segment to one of the following hazard categories for through seepage and underseepage as two geotechnical failure modes:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

4.2.2 Limitations of Status Evaluations

Limitations of seepage hazard assessments for ULE and NULE are summarized below.

Urban Levee Evaluations Project

The steady state seepage hazard classifications presented in this 2017 FSSR for ULE levees are based on analyses of data collected as part of ULE. The supplemental field explorations from 2009 and 2010 have been incorporated and considered in the hazard classifications. These supplemental explorations enhanced levee seepage analytical results because the efforts were focused on data gaps identified based on results of the initial data collection effort.

Although the analytical methodology used for this seepage hazard assessment (Section 4.2.1) is similar to that used for designing local levee improvement projects, its recommended use is limited to identifying potential geotechnical hazards in urban levees, and to guide future evaluations and levee improvements; it does not represent the level of effort that would be necessary to certify a levee under the FEMA National Flood Insurance Program, which would require geotechnical explorations and analyses at greater frequency.

Nonurban Levee Evaluations Project

NULE seepage hazard categories provided in the NULE Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a and DWR, 2011b) represent a preliminary analysis of levee seepage conditions. They are only sufficient to guide subsequent NULE field activities, and to prepare preliminary remedial alternatives (and associated cost estimates) necessary for levee repairs and improvements to attain acceptable levee performance. Results of an assessment are not meant to be used to determine how a levee or associated system may perform in a flood event. Because of the limitations identified above, seepage hazard categories for NULE levees were not used to evaluate compliance with current levee design criteria.

4.2.3 Results of Status Evaluations

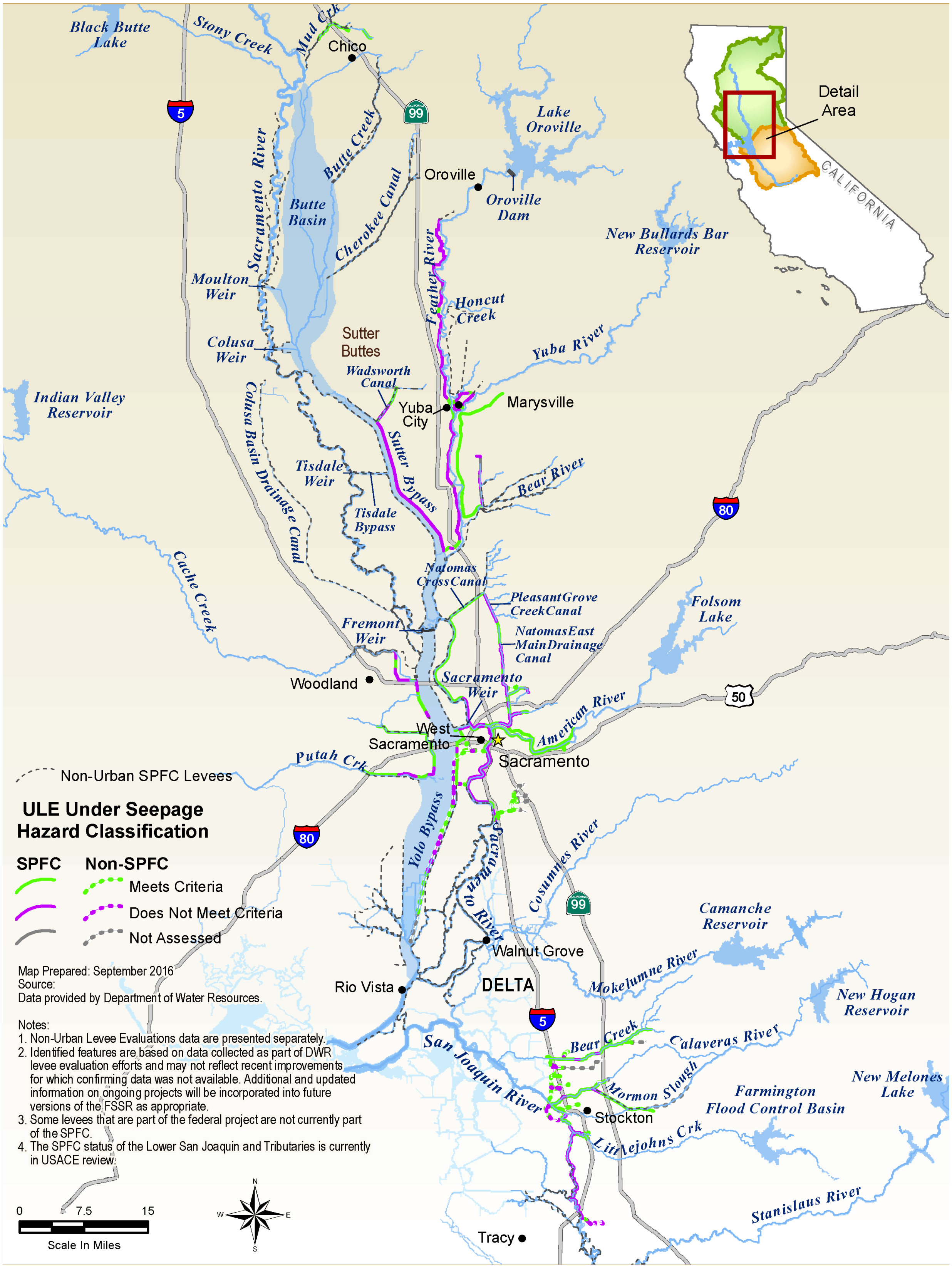
ULE and NULE seepage hazard assessments results are summarized below. Additional information about levee inspection results, historical levee seepage occurrences, recent remedial actions, ongoing and planned repairs and improvements, and ongoing actions to improve future evaluations for seepage are included in Appendix A, Section A-3. Also, USACE periodic inspection results for seepage in 10 USACE levee systems are included in Appendix A, Section A-1.

Urban Levee Evaluations Project

ULE steady state seepage hazard classification results are shown in Figure 4-5. Based on these results, SPFC ULE levee segments that generally meet seepage criteria include the rehabilitated portions of the Reclamation District 784 levees in Yuba County, the American River levees, the Natomas East Main Drainage Canal and Cross Canal levees, and Bear Creek levees in San Joaquin County. The longest segments that do not meet seepage criteria are along the west side of the Feather River. Classification results elsewhere among ULE levees varied. Overall, approximately one-third of SPFC ULE levees evaluated did not meet current seepage design criteria. Figure 4-8 shows ULE through seepage hazard classifications.

Nonurban Levee Evaluations Project

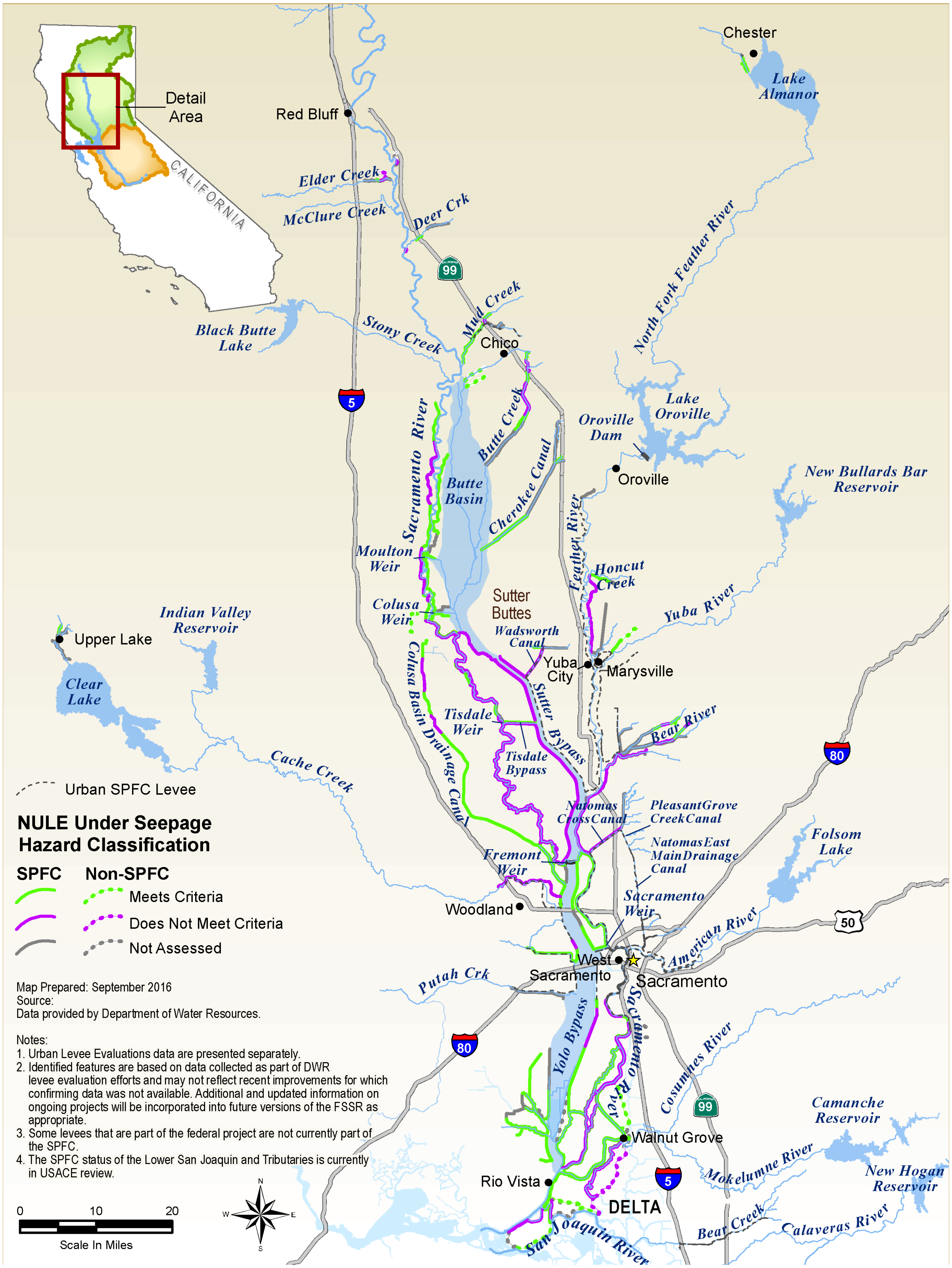
NULE underseepage hazard categorization results are shown in Figures 4-6 and 4-7. These figures show that approximately one-third of SPFC NULE levees in the Sacramento River watershed and almost two-thirds in the San Joaquin River watershed have a high underseepage hazard. Figures 4-9 and 4-10 show through seepage hazard categorizations for NULE levees in the two watersheds. In general, through seepage is less prevalent than underseepage; approximately one-eighth of SPFC NULE levees in the Sacramento River watershed and approximately half in the San Joaquin River watershed have a high through seepage hazard.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Non-Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-5. ULE Under Seepage Hazard Classification



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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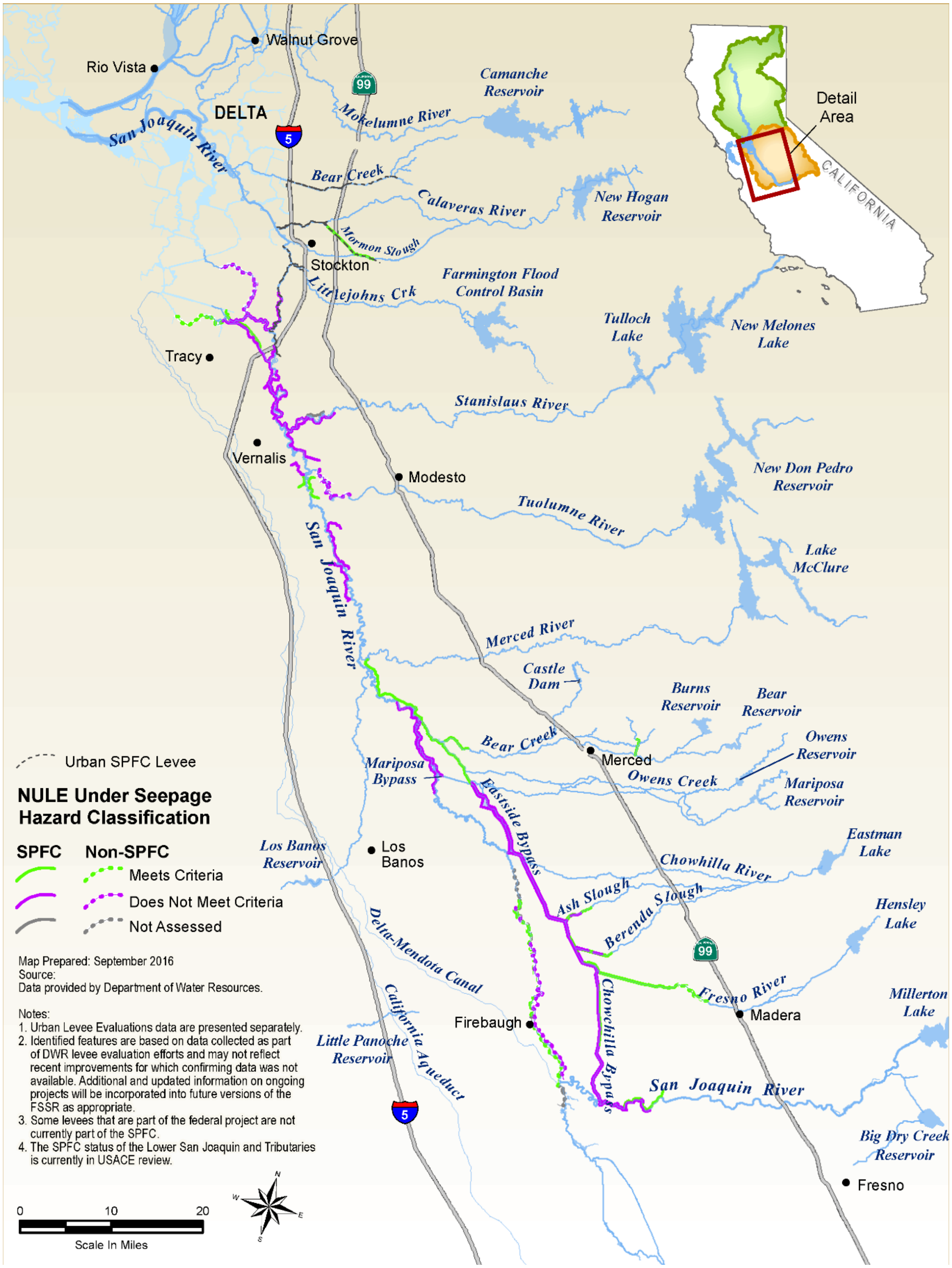
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-6. NULE Underseepage Hazard Categorizations in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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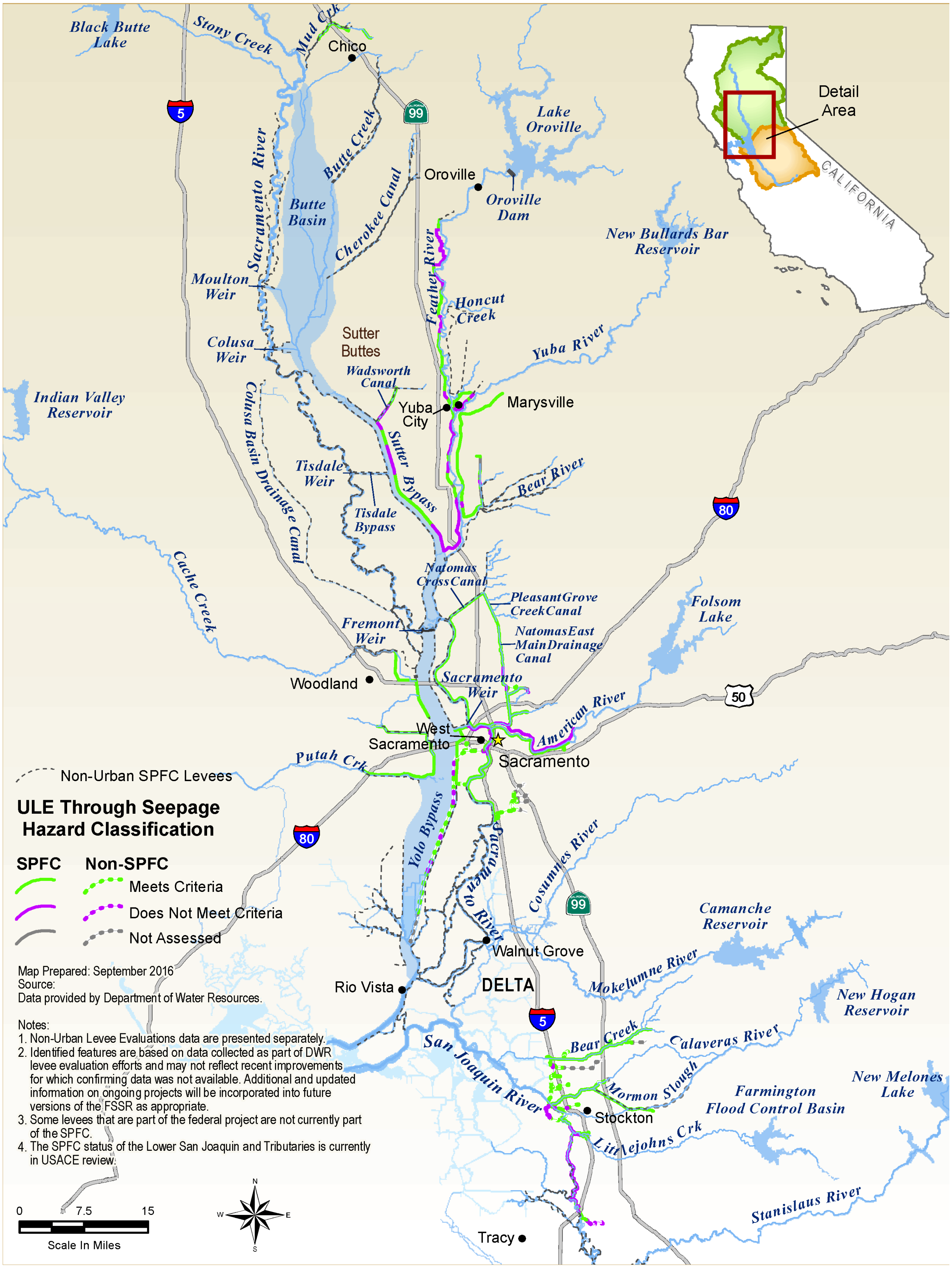
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-7. NULE Underseepage Hazard Categorizations in the San Joaquin River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:

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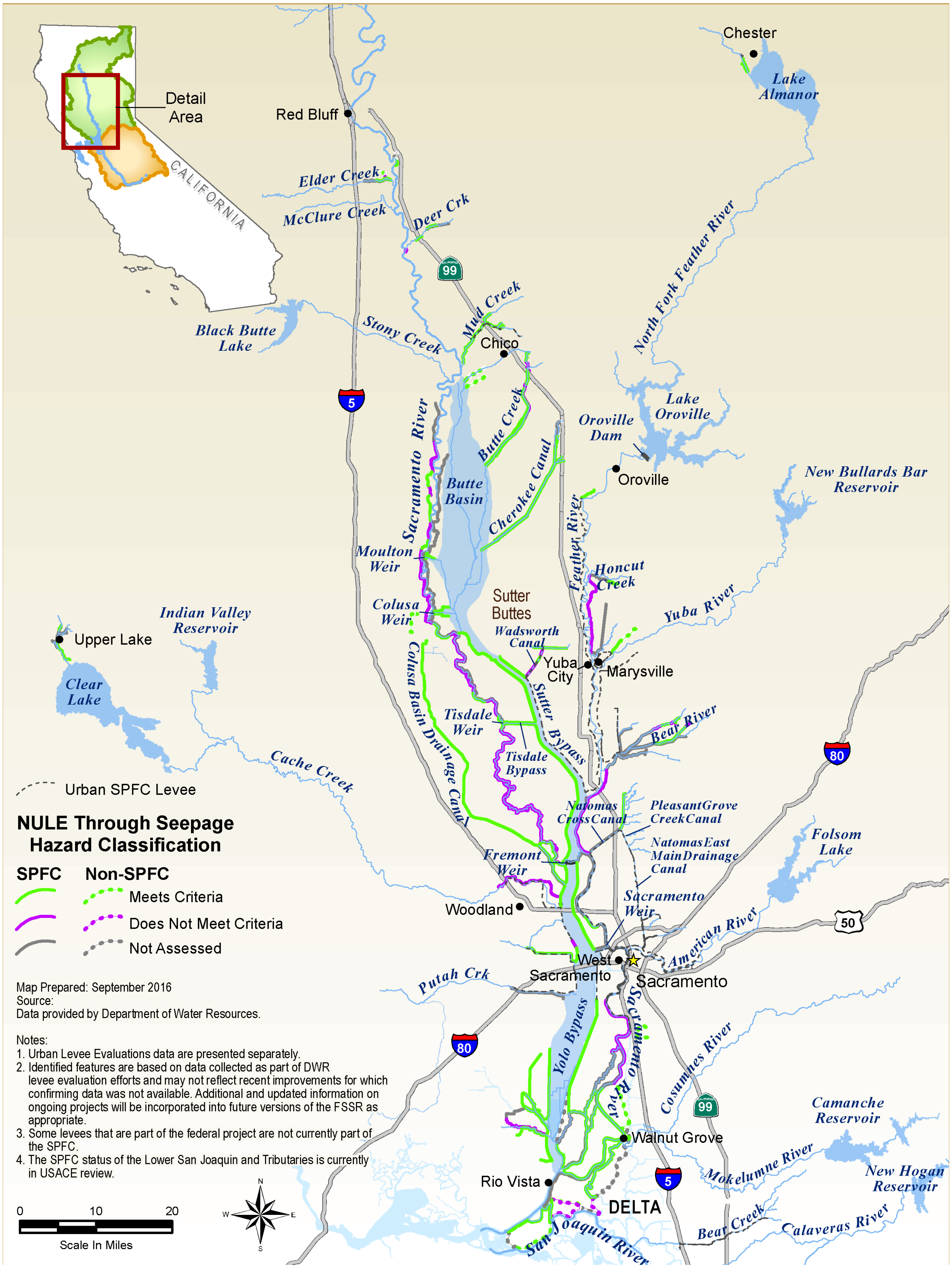
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-8. ULE Through Seepage Hazard Classification



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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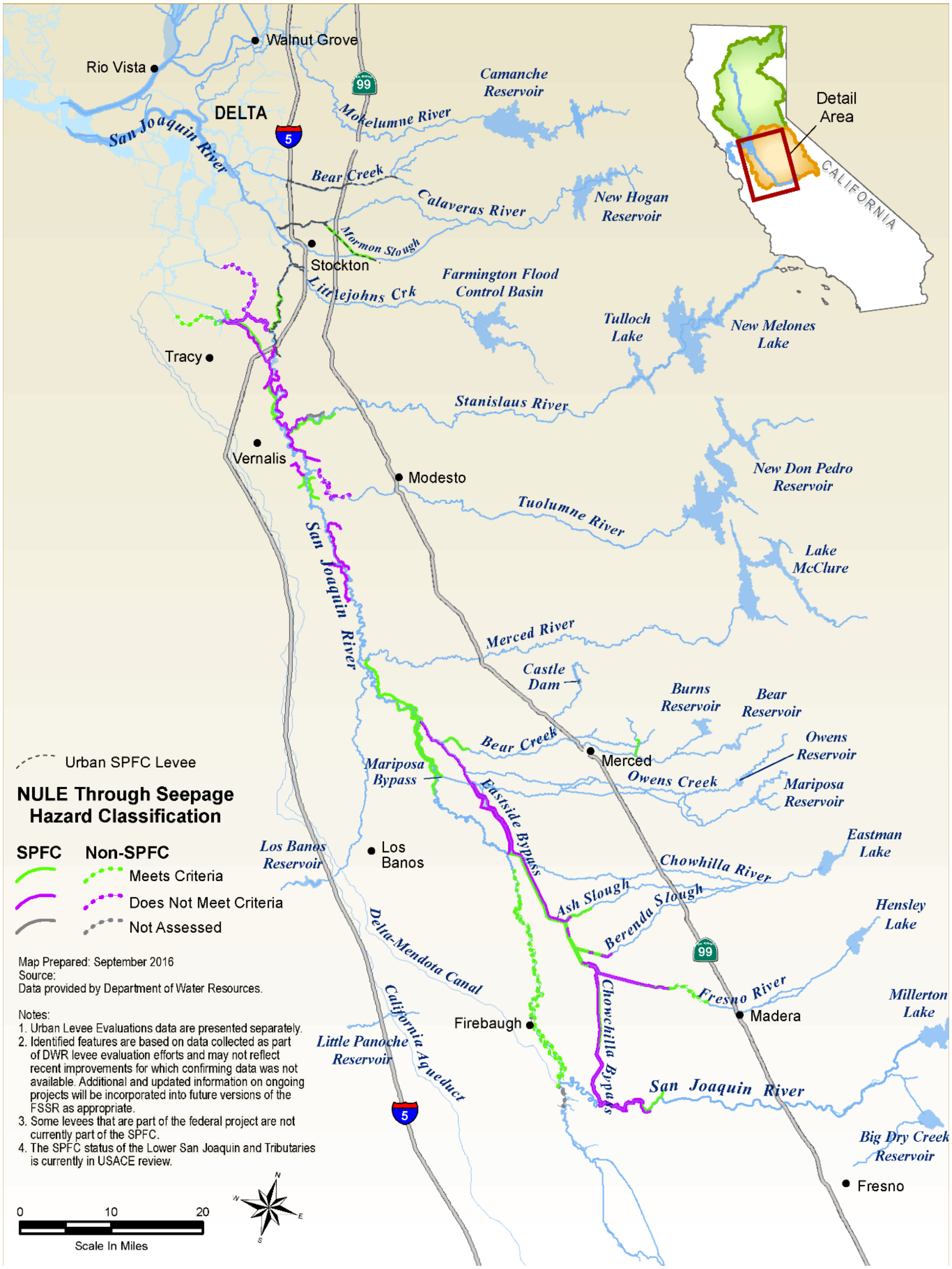
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-9. NULE Through Seepage Hazard Categorizations in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-10. NULE Through Seepage Hazard Categorizations in the San Joaquin River Watershed

4.3 Structural Instability

Structural instability is characterized by slides, sloughs, cracking, slope depressions, or bulges that could pose a threat to levee integrity. Structural instability is often associated with soft or dispersive soils in a levee or its foundation, or with design and construction practices used for the construction of levees in the late nineteenth and early twentieth centuries. Deferred maintenance may also influence structural instability, but to a much lesser extent. As indicated previously, many SPFC levees were built by landowners and local entities without benefit of current design or construction practices. New stability analyses may be necessary for existing levees, particularly for older levees constructed before adoption of current criteria.

4.3.1 Status Evaluation Methodology

DWR used different methods to assess the potential for structural instability for ULE and NULE, reflecting different scopes, objectives, and funding availability for the projects.

Urban Levee Evaluations Project

To assess structural instability along SPFC ULE levees, DWR performed a quantitative analysis of steady state slope stability that produced hazard classifications relative to established design criteria. Analytical models used for this effort incorporated topography from LiDAR surveys of the urban levee system, and existing and new geotechnical data from explorations conducted at regular intervals along the urban levee system. The models were used to calculate a factor of safety at the design water surface elevation, which was then compared against accepted geotechnical criteria, as specified in USACE's EM 1110-2-1913, Design and Construction of Levees (USACE, 2000) and DWR's ULDC (DWR, 2012a). As part of ULE, levee assessments were performed for steady state slope stability to determine if the levees met geotechnical criteria at the design water surface elevation. Similar to hazard assessments for seepage, DWR assessed each ULE levee segment and assigned each segment to one of the following hazard classifications:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

Nonurban Levee Evaluations Project

For NULE, levee performance was evaluated as hazard categories, which show potential for levee failure. As part of NULE Phase 1, levee hazard assessments were performed for slope stability based on a comparison of available geologic and geotechnical data and documented performance records. Similar to assessments for seepage, the slope stability hazard categorization identified during NULE Phase 1 included assessing each NULE levee segment and assigning each segment to one of the following hazard categories:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

4.3.2 Limitations of Status Evaluations

The limitations of structural instability hazard assessments for ULE and NULE are summarized below.

Urban Levee Evaluations Project

The hazard classifications presented in this 2017 FSSR for ULE levees are based on analyses of data collected as part of ULE, and also include data collected from the supplemental field explorations performed in 2009 and 2010. Data from the supplemental explorations enhance levee slope stability analytical results because the efforts were focused on data gaps identified based on results of the initial data collection effort, as presented in this 2017 FSSR.

Although the analytical methodology used for this slope stability hazard assessment (Section 4.3.1) is similar to that used in designing local levee improvement projects, its recommend use is limited to identifying potential geotechnical hazards to urban levees and to guide future evaluations and levee improvements; it does not represent the level of effort that would be necessary to certify a levee under the FEMA National Flood Insurance Program, which would require geotechnical explorations and analyses at greater frequency.

Nonurban Levee Evaluations Project

As mentioned, the hazard categories provided in the NULE Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a; DWR, 2011b) represent a preliminary analysis of levee conditions, and are only sufficient to guide subsequent NULE field activities and prepare preliminary remedial alternatives (and associated cost estimates) necessary for levee repairs and improvements to attain acceptable levee performance. Assessment results are not meant to be used to determine how a levee or associated system may perform during a flood event. Because of the limitations identified above, slope stability hazard categories for NULE levees were not used to evaluate compliance with current levee design criteria.

4.3.3 Results of Status Evaluations

Results of structural instability hazard assessments for ULE and NULE are summarized below. For additional information on inspection results, historical levee slope instability locations, recent remedial actions, ongoing and planned remedial actions/improvements, and ongoing actions to improve future evaluations, see Appendix A, Section A-4. Also, USACE periodic inspection results for slope stability in 10 USACE levee systems are included in Appendix A, Section A-1.

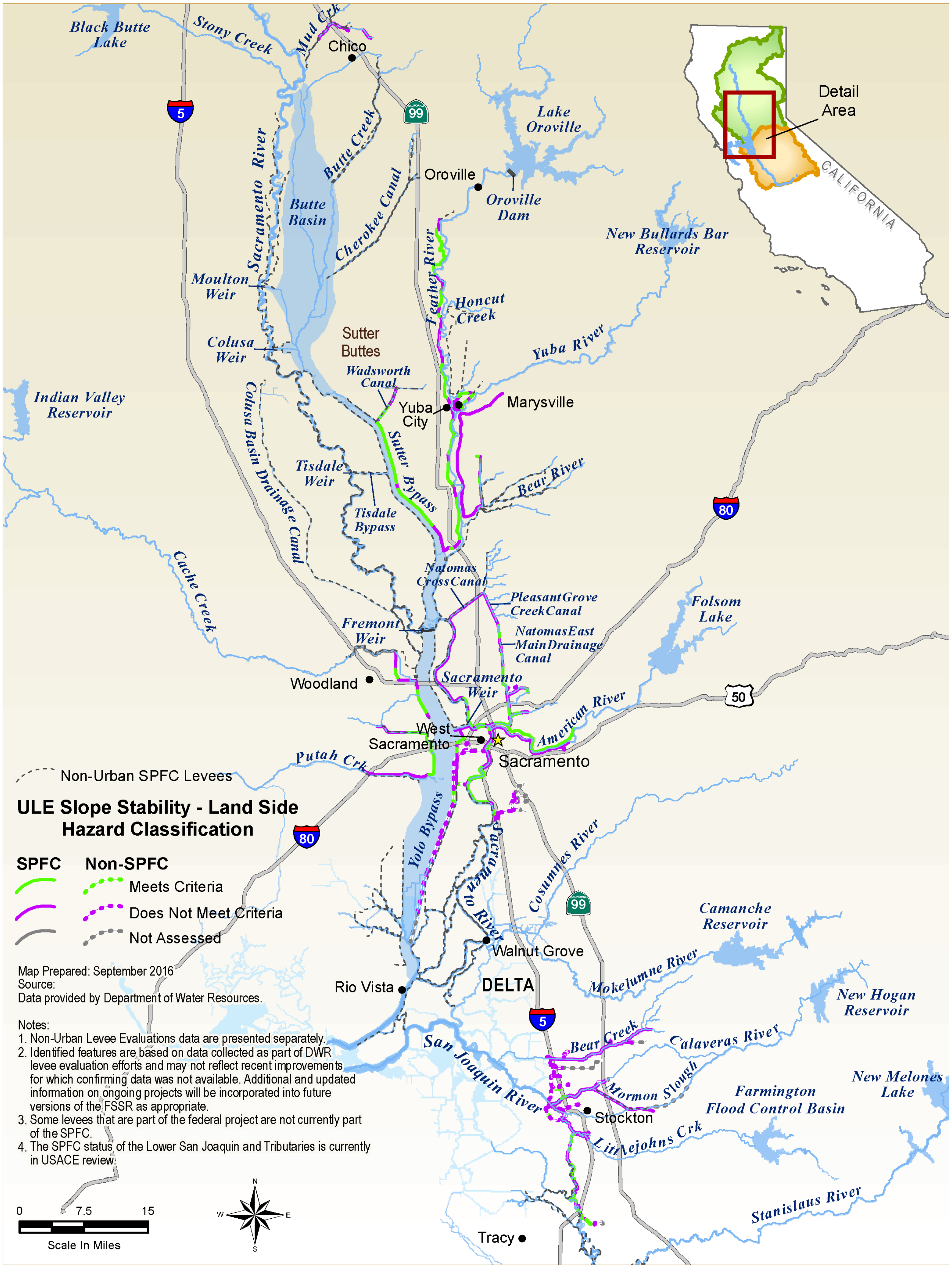
Urban Levee Evaluations Project

ULE steady state stability hazard classification results are shown in Figure 4-11. Based on these results, an estimated one-fifth of SPFC ULE levees do not meet geotechnical criteria for slope stability at the design water surface elevation. In general, SPFC ULE levees in the San Joaquin River watershed, along the American River, and along rehabilitated reaches of the Natomas basin and east of the Feather River meet slope stability criteria. Results along the remaining SPFC ULE levees vary.

Nonurban Levee Evaluations Project

NULE slope stability hazard categories are shown in Figures 4-12 and 4-13. As shown, there is generally a higher slope stability hazard for levees in the Sacramento River watershed compared to the San Joaquin River watershed.

Approximately one-eighth of SPFC NULE levees in the Sacramento River watershed and 1 percent in the San Joaquin River watershed have a high slope stability hazard.



Non-Urban SPFC Levees

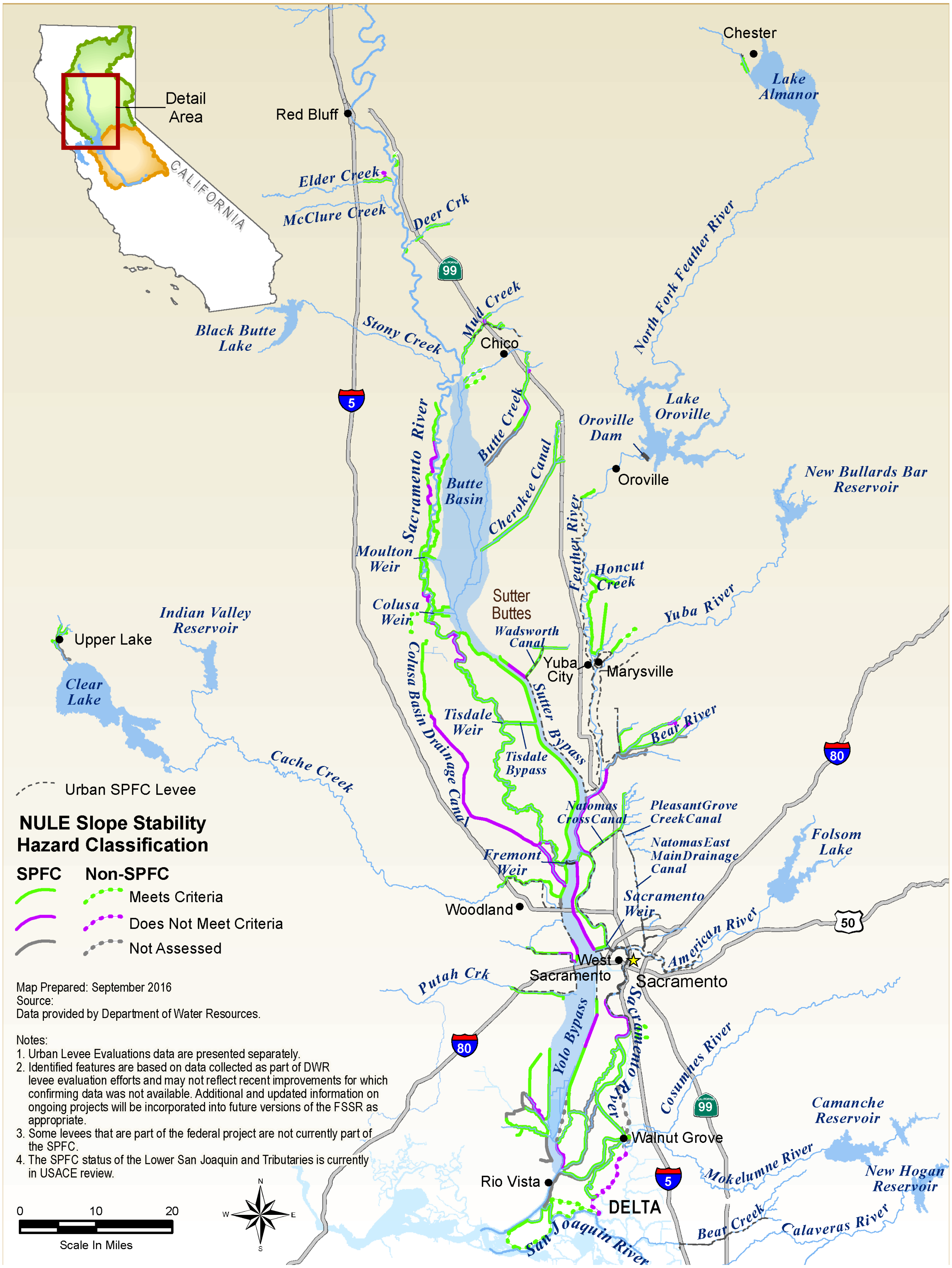
ULE Slope Stability - Land Side Hazard Classification

SPFC	Non-SPFC	
🟩	🟩	Meets Criteria
🟪	🟪	Does Not Meet Criteria
▬	▬	Not Assessed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Non-Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-11. ULE Steady State Stability Hazard Classifications



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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3. Some levees that are part of the federal project are not currently part of the SPFC.
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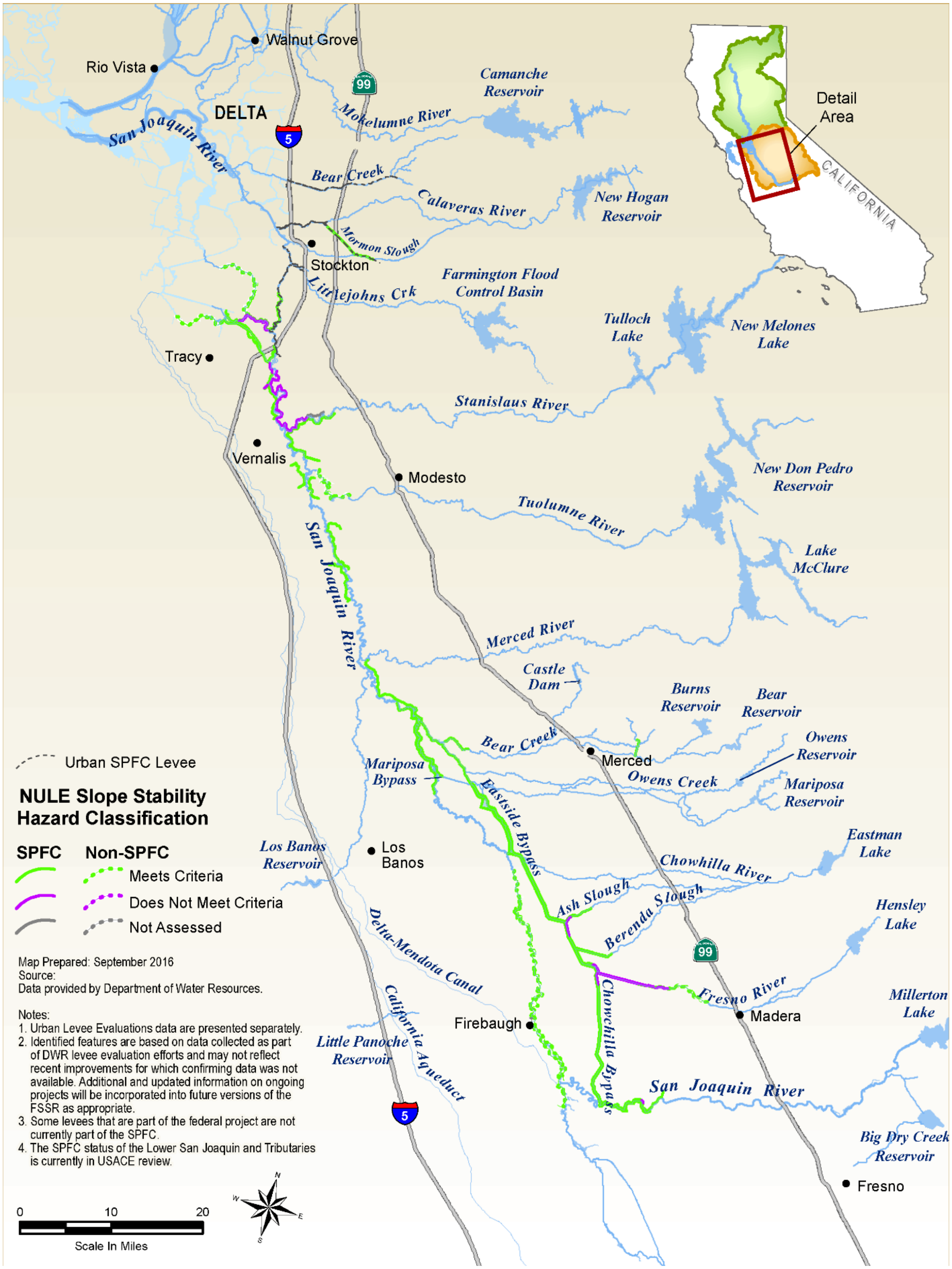
Figure 4-12. NULE Slope Stability Hazard Categorizations in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:

1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-13. NULE Slope Stability Hazard Categorizations in the San Joaquin River Watershed

4.4 Erosion

Levee erosion problems are primarily the result of a lack of modern engineering criteria and construction standards for levees at the time of construction, resulting in unsuitable levee materials and narrow levee alignments in many locations. Deferred maintenance also contributes to erosion problems in some locations. Many early levees were not engineered to meet modern criteria and were constructed with readily available materials dredged from an adjacent river.

In many levee reaches of the Sacramento River system, levee alignments were designed and constructed close to the natural bank to flush out sediments that had accumulated in the system from hydraulic mining activities in the late 1800s. Decisions to construct levees close to channels more than 100 years ago shaped the location and alignment of SPFC levees today. By about 1912, an estimated 87 percent of the 494 miles of river levees in what is now the Sacramento River Flood Control Project had already been constructed on the valley floor. This effectively fixed the location and alignment of these levees for construction of the Sacramento River Flood Control Project. For instance, on the mainstem Feather River, existing levees controlled the location and alignment of approximately 77 percent of the Sacramento River Flood Control Project levees. In addition, some reclamation levees had already been built by 1912, which fixed the location and alignment of some of the bypass levees (Kochis, 1969).

By the mid-twentieth century, high velocity flows had largely scoured hydraulic mining sediment from the system, and erosion was recognized as a problem. As a result, many levees have been critically damaged and many more will continue to erode. Weakened levee geometry, poor soil materials, leaking pipes that penetrate levees, high flow velocity, and wave action have further exacerbated erosion problems.

Deferred maintenance can also contribute to erosion problems. Erosion repair and bank protection need to be conducted in a timely manner to prevent further erosion and possible levee failure. Some erosion can be attributed to rainfall on the levee, causing rounding off of the shoulders and movement of the toe, and should be addressed through maintenance activities; other erosion is attributable to the river's erosive forces, and should be addressed by bank protection or levee setback or removal projects.

4.4.1 Status Evaluation Methodology

DWR used different methods to assess the potential for erosion for ULE and NULE, reflecting different scopes, objectives, and funding availability for the projects.

Urban Levee Evaluations Project

For this 2017 FSSR, the levee geometry check described in Section 4.1 serves as an indicator for levee erosion problems. Following the completion of ULE, a multitiered erosion evaluation process will be included in the the various GERs and the associated information will be compiled in this 2017 FSSR. The evaluation process will consider levee geometry, potential for wind-wave action, and past erosion history as part of the the first tier analysis. This finalized information will be summarized predominantly through the figures in Section 4.4.3.

ULE levee segments that had potentially moderate or high erosion hazard based on first-tier analysis were assessed under second-tier analyses. During second-tier analyses, levee surface materials and river flow velocities were compared, wave shear stress were evaluated, and field reconnaissance was conducted to verify past performance. ULE levee segments had potentially moderate or high erosion hazard based on the second-tier analyses were assessed under third-tier analysis, which classified levees as having a low, moderate, or high erosion hazard.

As a summation of the ULE analysis, ULE Erosion Hazard categorizations were characterized as:

- Low
- Medium
- High
- Not Assessed

Nonurban Levee Evaluations Project

For NULE, levee performance was evaluated as hazard categories that show potential for levee failure. NULE performed hazard assessments for levee erosion using past performance information from previous annual erosion studies prepared by DWR and USACE, information compiled from other reports, interviews with levee maintenance officials, and field reconnaissance. In addition to these documented occurrences of erosion, evidence of erosion was researched through review of topographic contours of levee waterside slopes. Results are documented in the Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a and DWR 2011b). NULE Phase 1 included assessing each NULE levee segment and assigning each segment to one of the following hazard categories:

- Meets Criteria (M)
- Does Not Meet Criteria (DNM)
- Not Assessed (NA)

4.4.2 Limitations of Status Evaluations

The limitations of erosion hazard assessments for ULE and NULE are summarized below.

Urban Levee Evaluations Project

ULE has completed evaluations specifically for erosion. However, because the levee geometry evaluation performed for ULE (described in Section 4.1.3) may indicate potential erosion hazard, it may be considered a proxy for erosion hazards, as mentioned.

Inadequate levee geometry may occur from a variety of conditions, including erosion. The results of that geometry check should be considered a conservative evaluation of the potential hazards associated with erosion. A more specific evaluation of erosion hazard, as described in Section 4.4.1, was provided in the Geotechnical Evaluation Reports prepared by DWR for each ULE study area.

Nonurban Levee Evaluations Project

As mentioned, the hazard categories provided in the NULE Geotechnical Assessment Reports for the North NULE Study Area and South NULE Study Area (DWR, 2011a and DWR, 2011b) represent a preliminary analysis of levee conditions. They are sufficient only to guide subsequent NULE field activities and prepare preliminary remedial alternatives (and associated cost estimates) necessary for repairs and improvements to achieve acceptable levee performance. NULE levee erosion hazard assessment results are not meant to be used to determine how a levee or associated system may perform during a flood event, or whether levees comply with current levee design criteria.

4.4.3 Results of Status Evaluations

ULE and NULE levee erosion hazard assessment results are summarized below. For additional information about levee inspection results, historical erosion occurrences, recent remedial actions, ongoing and planned repairs and improvements, and other actions to improve future evaluations, see Appendix A, Section A-6. Also, USACE periodic inspection results about levee erosion/bank caving for 10 USACE levee systems are included in Appendix A, Section A-1.

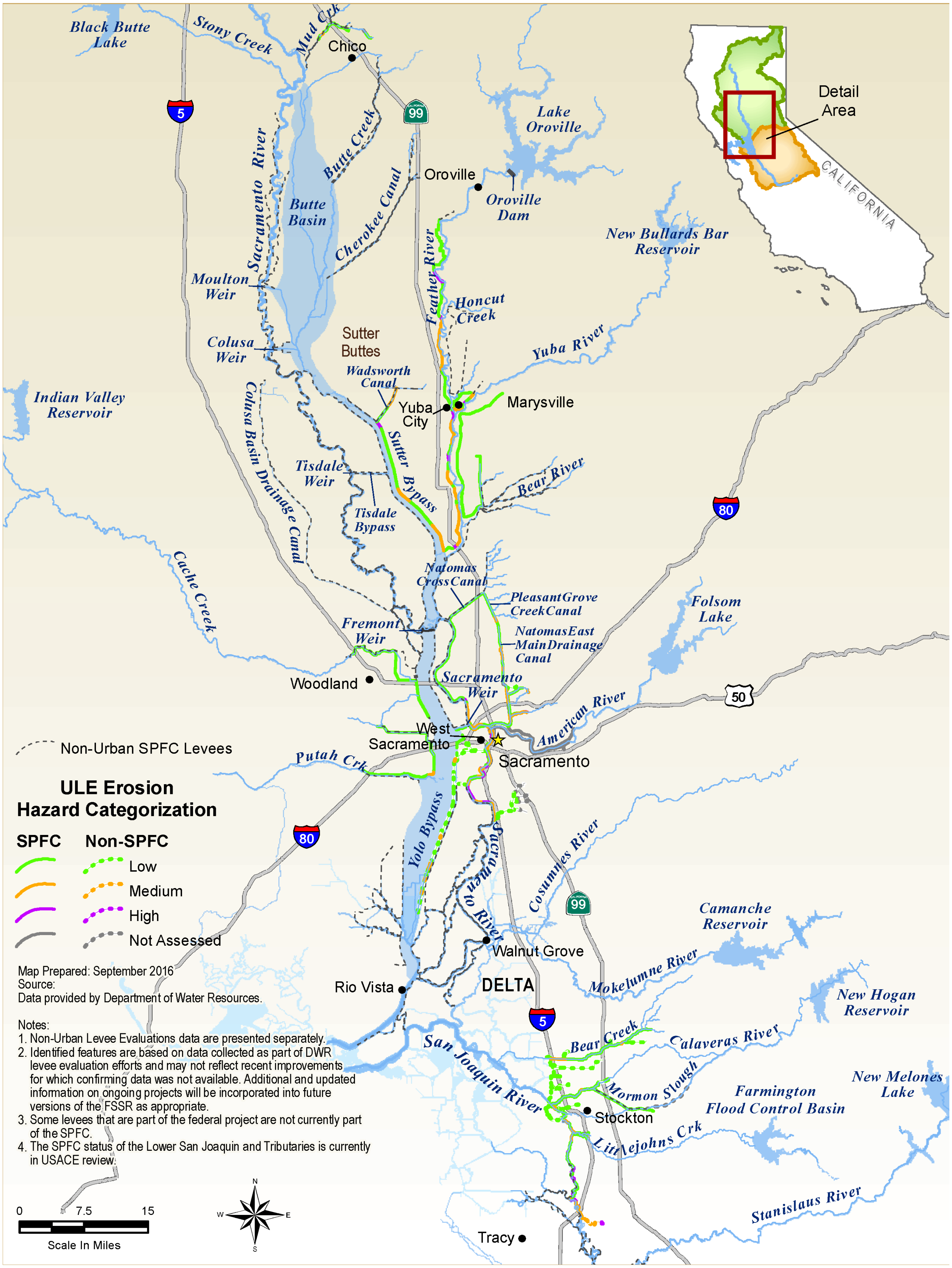
Urban Levee Evaluations Project

ULE has completed a hazard assessment specifically for levee erosion susceptibility; this is summarized in Figure 4-14.

Nonurban Levee Evaluations Project

Estimates of NULE levee erosion hazard categorizations for the Sacramento River and San Joaquin river watersheds are shown in Figures 4-15 and 4-16, respectively. Approximately one-seventh of SPFC NULE levees in the Sacramento River watershed were categorized as having a high erosion hazard. NULE levee segments with high erosion hazard in the Sacramento River watershed are predominantly located in the area between the City of Sacramento and the Bear River in Yuba County.

The majority of NULE levees in the San Joaquin River watershed were categorized as having a low erosion hazard. The approximately one-eighth of SPFC NULE levee segments with high erosion hazard are predominantly located on the lower San Joaquin River (downstream from the Tuolumne River confluence), at Berenda Slough, and on the Fresno River.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:

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3. Some levees that are part of the federal project are not currently part of the SPFC.
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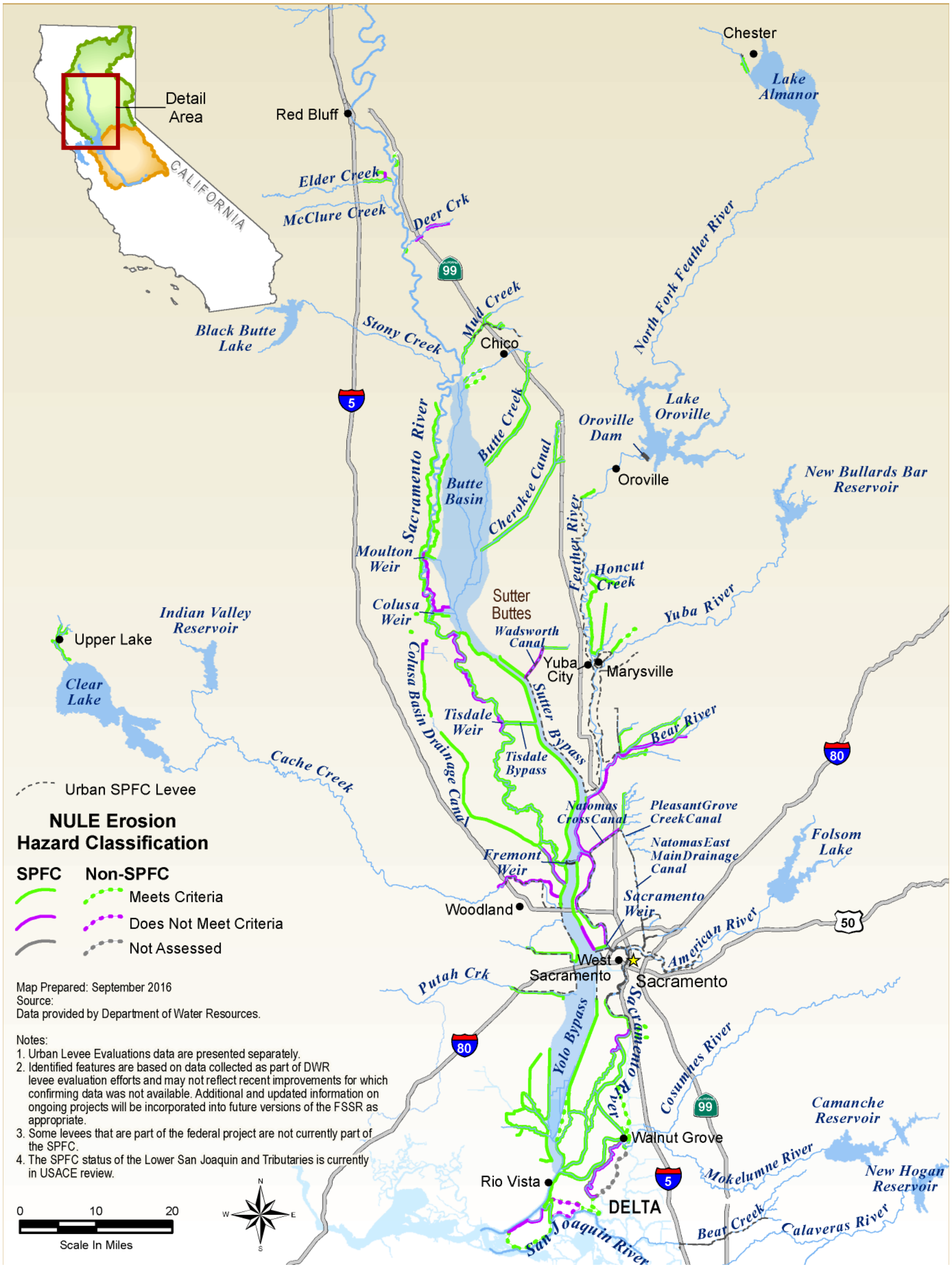
Figure 4-14. ULE Erosion Hazard Categorization



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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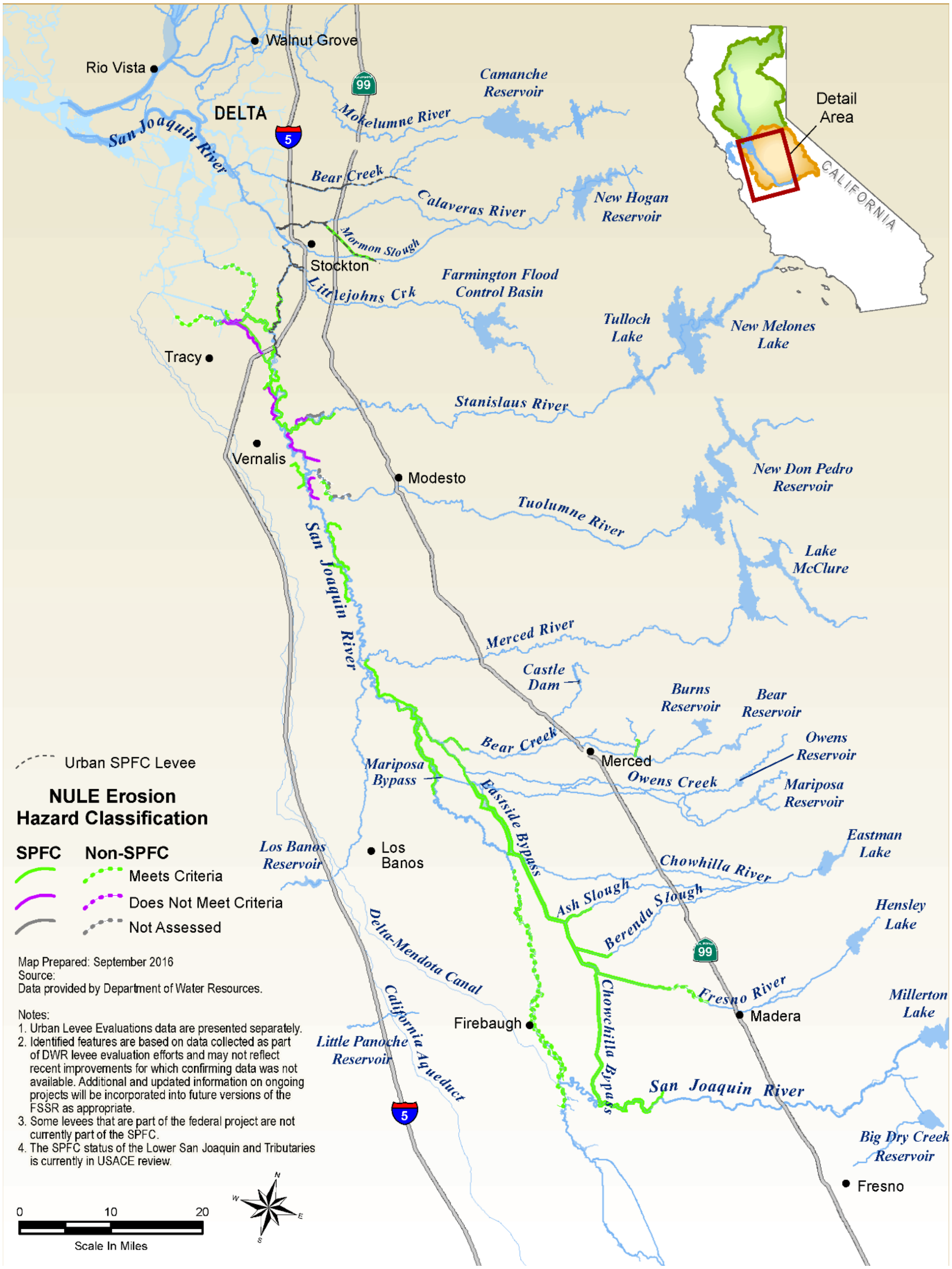
Figure 4-15. NULE Erosion Hazard Categorizations in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
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2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
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4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-16. NULE Erosion Hazard Categorizations in the San Joaquin River Watershed

4.5 Settlement

Settlement problems exist where areas along the crown of a levee are lower than the design elevation. Three types of settlement problems affect SPFC levees: land subsidence, consolidation settlements, and localized depressions. Each settlement type is caused by different factors.

Land subsidence occurs in some regions from factors outside flood management, including groundwater extraction, natural gas, and peat oxidation, that have occurred over large areal extents rather than in localized places. Regional land subsidence contributes to settlement of levee foundations.

Consolidation settlement results from consolidation of underlying strata during and after levee construction because of the weight of the overlying levee structure. Consolidation settlement is generally applicable to levee embankments or levee raises soon after they have been constructed. Because most SPFC levees have been in place for nearly 100 years, it is likely that most primary consolidation settlement has already occurred; additional consolidation settlement in these locations is not expected. However, settlement of levees constructed on peat or other soft soils can occur gradually over time.

Localized depressions are surface manifestations of an underlying problem in a levee embankment, and are most often the result of internal voids and cavities. Such depressions and sinkholes are more hazardous to levees than long-term consolidation settlements because the collapse of voids present within a levee or its foundation can pose immediate threats to the levee embankment. Presence of localized depressions can be affected by soft, dispersive soils in a levee or levee foundation, early twentieth-century design and construction practices, and lack of any levee settlement criteria at the time of construction. In addition, many existing levees do not comply with current USACE levee settlement criteria because the levees were constructed before adoption of these criteria. Deferred maintenance problems from animal burrows or leaky pipes that penetrate a levee or levee foundation can also increase the vulnerability of a levee to localized depressions. In addition, localized depressions can be increased by erosion or seepage. Finally, localized depressions can result from vehicle travel on the levee during wet conditions, resulting in rutting and displacement of levee soils.

4.5.1 Status Evaluation Methodology

Settlement conditions described in this 2017 FSSR consider only localized depressions. DWR visually inspects SPFC levees for crown surface depressions and rutting at least two times per year, and reports results annually. Table 4-3 shows the DWR inspection rating descriptions for crown surface/depressions/rutting on earthen levees.

Table 4-3. Levee Inspection Rating Descriptions for Crown Surface/Depressions/Rutting on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	The road is in all-weather condition and drains properly without any ponded water. There are no ruts, pot holes, or other depressions on the levee crown or embankments. The levee crown and access roads are well established and drain properly without any ponded water. The crown is at or above the design elevation.
Minimally Acceptable (M)	The all-weather surface requires some maintenance but will not prevent access during the coming flood season. Some ruts, holes, settlement or other depressions on the levee less than 6 inches deep were observed or sections of the crown have settled below the design elevation for distances less than 100 feet.
Unacceptable (U)	The all-weather surface will not be usable during the coming flood season. Material should be added or the roadway regraded before the next flood season. There are depressions greater than 6 inches deep that will pond water or a large amount of additional road material is needed to ensure all-weather access. The levee may have settled below the design elevation for a distance greater than 100 feet.

Source: DWR, 2015

4.5.2 Limitations of Status Evaluations

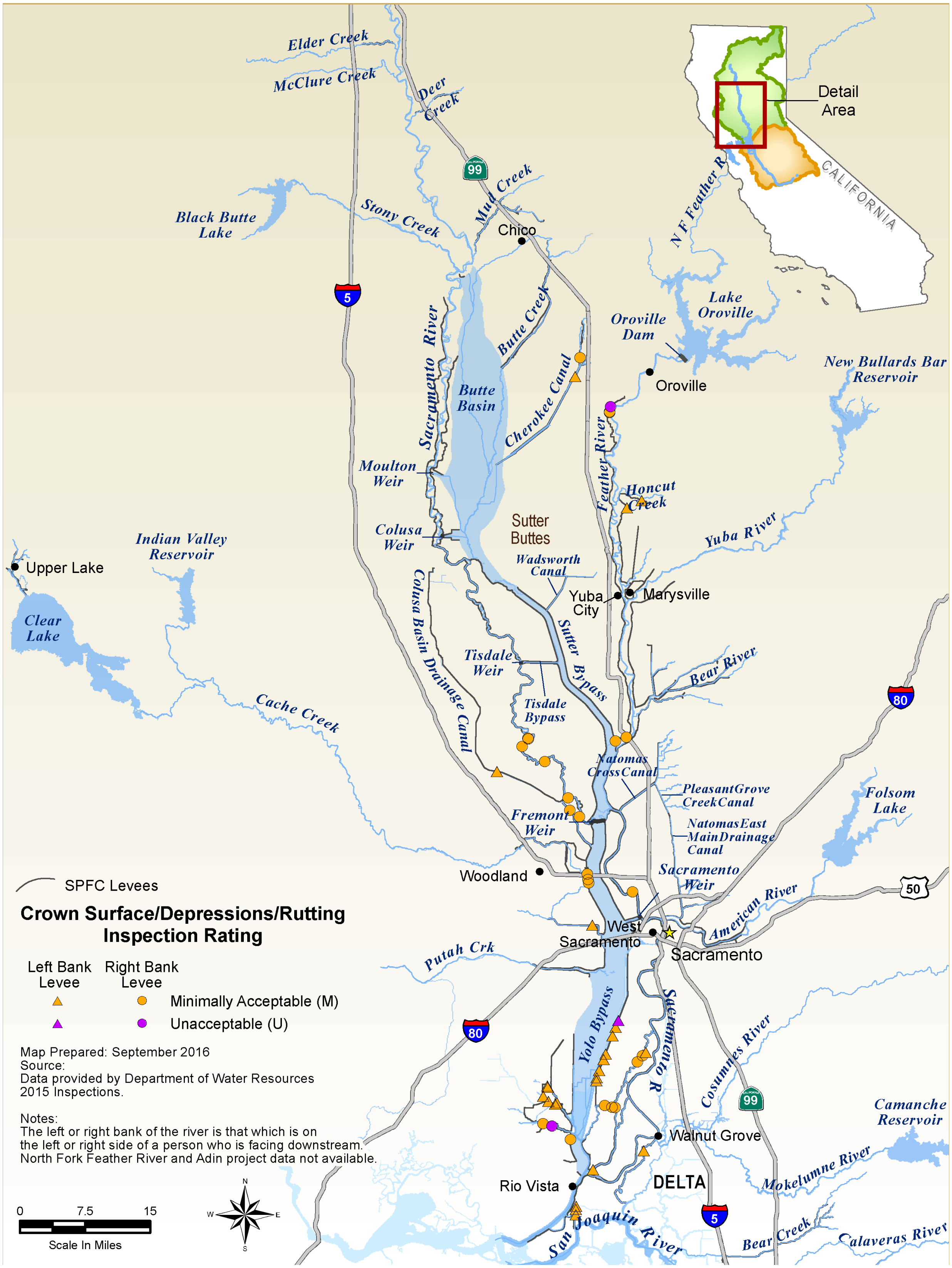
ULE and NULE did not assess settlement hazard in detail. Results from DWR's crown surface/depressions/rutting inspections presented here were not considered in assigning ULE and NULE overall hazard classifications and categorizations, respectively. However, levee settlement is included in this 2017 FSSR as a levee status factor because it can potentially reduce levee freeboard or compromise levee integrity.

As mentioned, DWR's levee inspections focus on identifying localized depressions and do not identify settlement problems from land subsidence or consolidation settlement. A typical levee inspection occurs from the crown of a levee. Thick vegetation and wide berms can obstruct an inspector's view of levee depressions. A more thorough evaluation of settlement conditions would include consideration of subsurface conditions to identify problems, and a systemwide review of existing levee crown elevation compared to levee design elevation.

4.5.3 Results of Status Evaluations

Minimally Acceptable and Unacceptable levee crown surface/depressions/rutting inspection ratings from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b) are shown in Figures 4-17 and 4-18. DWR inspections identified five locations of localized levee settlement that affect the integrity of levees (i.e., ratings of Unacceptable).

For additional information about levee sinkhole and subsidence data collected by NULE, recent, ongoing, and planned repairs and improvements, and ongoing actions to improve future evaluations, see Appendix A, Section A-6. Also, USACE periodic inspection results for levee settlement and depressions/rutting for 110 USACE levee systems are included in Appendix A, Section A-1.



SPFC Levees

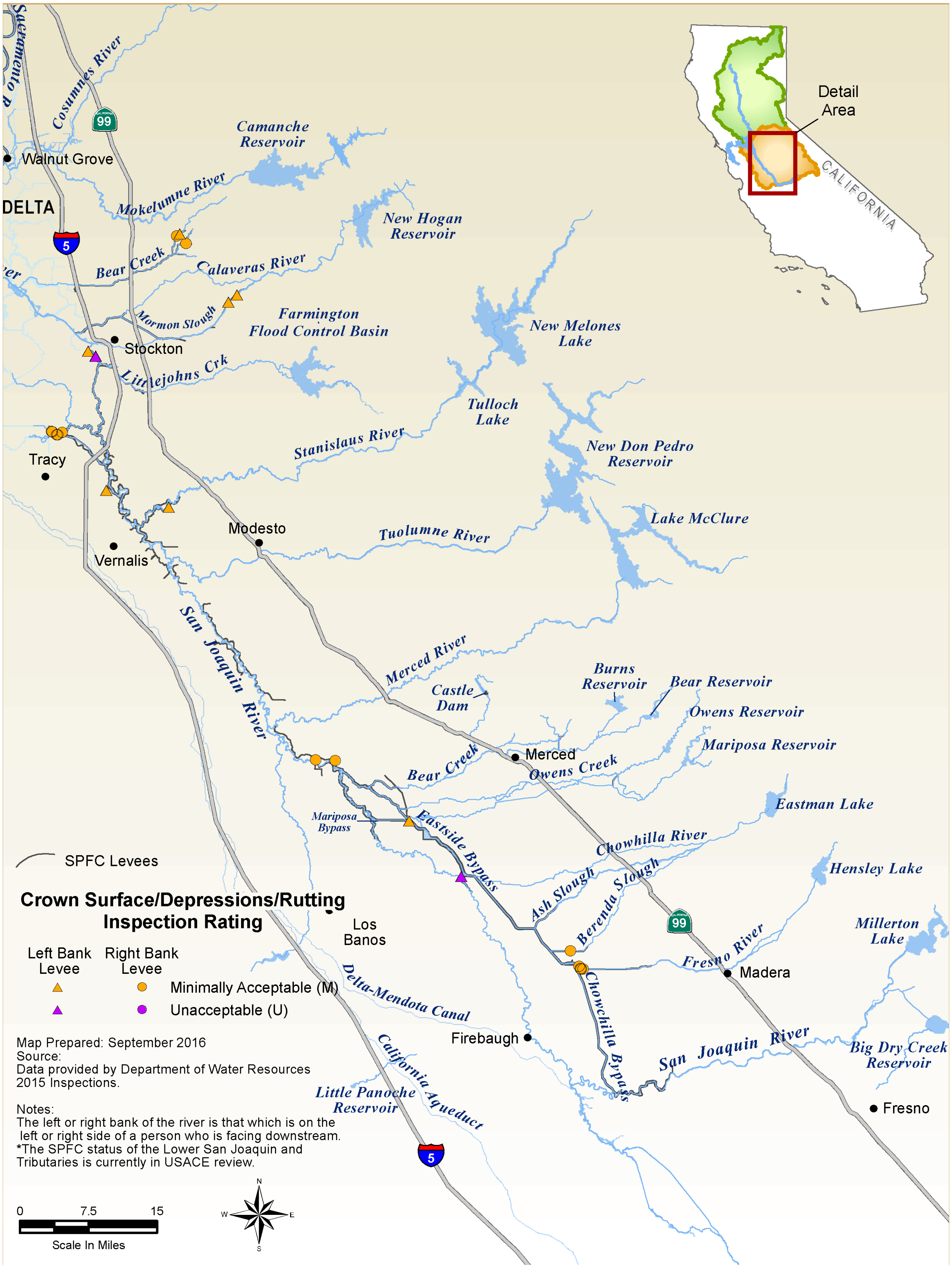
Crown Surface/Depressions/Rutting Inspection Rating

Left Bank Levee	Right Bank Levee	
▲	●	Minimally Acceptable (M)
▲	●	Unacceptable (U)

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
North Fork Feather River and Adin project data not available.

Figure 4-17. 2015 Crown Surface/Depressions/Rutting Inspection Ratings in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-18. 2015 Crown Surface/Depressions/Rutting Inspection Ratings in the San Joaquin River Watershed

4.6 Penetrations

Penetrations can be potential pathways for seepage

Penetrations include man-made objects that cross under or through a levee or floodwall and can create a preferential seepage path or hydraulic connection with the waterside. Typically, a penetration is a pipe or transportation structure, such as a roadway or rail line. Many penetrations are or were used for interior drainage and agricultural irrigation and are located in both urban and nonurban areas. Many penetrations were installed after levee construction and were therefore often not accounted for as part of original levee design. Other penetrations were constructed first and levees were built on top.

Currently, penetrations through a levee must comply with criteria found in Title 23, Division 1, Chapter 1, Article 8, Section 123 of the California Code of Regulations. However, there are many cases where penetrations do not meet design criteria. In some instances, no modifications to the penetrations were made at the time the levee was constructed or when the levee was adopted as part of the SPFC. In addition, many old or abandoned penetrations were not installed using current criteria. Many penetrations were included as part of a particular flood control project and maintenance was turned over to maintaining agencies. DWR’s UCIP has identified over 7,600 penetrations through SPFC levees. However, there are still numerous penetrations that have not been located. Documentation of historical abandonment of penetrations is limited. As mentioned, penetrations can provide potential pathways for seepage, and may contribute to levee failure. In some instances, if backfill surrounding penetrations is more permeable than levee soils, a seepage pathway can develop. Susceptibility to seepage is particularly acute from older penetrations, which are prone to corrosion or collapse. Metal pipes can corrode, creating holes and leaks. These penetrations can induce the levee embankment to erode, creating areas of weakness or internal voids. This internal erosion often remains hidden until a surface expression develops, such as a sinkhole or localized depression (see Section 4.5 for a discussion of localized depressions).

In many instances, however, internal erosion has no surface expression and the threat to a levee remains undetected. Challenges to evaluating the threat to levee integrity from levee penetrations include the high number of penetrations in the Sacramento and San Joaquin river watersheds, limited existing documentation, and the significant time and expense required for invasive inspections.

Damage to levee embankments from penetrations can contribute to seepage, stability, and settlement problems. If the phreatic surface[10] intersects an internal levee embankment cavity during a high water event, internal erosion may accelerate, and potential for development of a levee breach will increase. Levee seepage, stability, and settlement problems are discussed in Sections 4.2, 4.3, and 4.5, respectively.

4.6.1 Status Evaluation Methodology

Through UCIP, DWR has identified, located, and visually inspected over 7,600 existing penetrations over the last 3 to 5 years. UCIP uses data from existing sources, including DWR levee logs, O&M manuals, permits, as-built drawings, and data from ULE and NULE. Each penetration is field verified and assigned a condition. As part of this effort, DWR has categorized existing penetrations into three maintenance categories: Urgent, Non-Urgent, and No Action Needed. Penetrations that appear well-maintained during a visual inspection are categorized as No Action Needed. Penetrations are categorized as Non-Urgent if there are maintenance deficiencies that do not immediately impact levee integrity during the next high water event. A penetration is categorized as Urgent if there are visible signs of damage or excessive wear and tear that could lead to levee integrity issues during the next high water event. DWR has plans to integrate these UCIP categories into the inspection ratings in the near future.

4.6.2 Limitations of Status Evaluations

DWR is continuing to catalog levee penetrations through SPFC levees. Due to ongoing maintenance activities and new permit applications, there is a need for continual updates and quality control of the utility crossing inventory database. As new information becomes available, revisiting previous records is necessary to make sure that the latest information is being used. Additional penetrations data, including data from remote sensing or electromagnetic surveys may be incorporated into future updates of this 2017 FSSR.

Efforts are also ongoing to develop criteria to evaluate risks associated with penetrations. Although records exist for many permitted penetrations, physical characteristics of the penetration (e.g., pipe dimension, material, use) were not documented consistently, and records stem from several different sources. The UCIP has been able to correct for many of the inconsistencies between the available data sources. However, there are a number of penetrations not found during field investigations that still may not have consistent records about the size, material, and use of the penetration. Efforts to sort out these inconsistencies are ongoing and updated as new information becomes available.

Penetrations data were some of the qualitative data inputs incorporated in assigning a NULE through seepage hazard category, and therefore were also considered during NULE overall hazard categorization. Penetrations data were not considered when assessing overall hazard classification for ULE levees because ULE seepage hazards were assessed using numerical computer models incorporating site-specific geotechnical data from soil borings.

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[10] The phreatic surface is the location where pore water pressure is under atmospheric conditions. The phreatic surface normally coincides with the water table.

4.6.3 Results of Status Evaluations

Figures 4-19 and 4-20 show documented levee penetrations for the Sacramento and San Joaquin river watersheds, respectively. Data show that penetrations are prevalent throughout the entire levee system. As mentioned, the current DWR UCIP database includes more than 7,600 penetrations through SPFC levees. In the Sacramento Valley, existing data include the greatest density of penetrations along the Sacramento River levees upstream from the Sutter Bypass and downstream from the City of Sacramento, with fewer penetrations documented along the Feather River levee system, along the smaller tributary stream levees, and along the bypass levees. In the San Joaquin Valley, penetrations have been identified throughout the San Joaquin River levees between Stockton and Fresno.

Tables 4-5 through 4-9 summarize information related to penetrations from the UCIP database. UCIP penetration status indicates whether or not a penetration was located during field verification. A penetration may have been found directly, may have been found via an indicator, or may not have been found. UCIP keeps track of penetration locations from a number of sources. However, some of these penetrations may not be located without subsurface investigation or remote sensing methods (see Table 4-4).

Table 4-4. UCIP Penetration Status by Watershed

Watershed	Found	Indicator Found	Not Found	Total
Sacramento River	2844	985	1419	5248
San Joaquin River	1627	222	512	2361
Grand Total	**4471**	**1207**	**1931**	**7609**

As part of the UCIP field investigation, penetrations were categorized as discussed in Section 4.4. The number of penetrations that have been categorized into each type are shown in Table 4-5. A total of 895 penetrations have not been rated at this time.

Table 4-5. UCIP Maintenance/Repair Category by Watershed

Watershed	No Action Needed	Non-Urgent	Urgent	None	Total
Sacramento River	2617	1612	259	760	5248
San Joaquin River	1252	873	101	135	2361
Grand Total	**3869**	**2485**	**360**	**895**	**7609**

A variety of materials have been used in the construction of penetrations inventoried under UCIP. Each material may have different costs, operations and maintenance procedures, and lifespans. Table 4-6 shows the number of penetrations constructed using a particular material.

Table 4-6. Type of Material Used for Penetrations by Watershed

Penetration Material By Watershed	Number of Penetrations
Sacramento River	**5248**
Corrugated Metal	730
Plastic Pipe (HDPE, PVC, etc.)	190
Galvanized Iron	140
Steel	2014
Reinforced Concrete	306
Other	75
Unknown	1793
San Joaquin River	**2361**
Corrugated Metal	717
Plastic Pipe (HDPE, PVC, etc.)	91
Galvanized Iron	52
Steel	713
Reinforced Concrete	208
Other	9
Unknown	571

HDPE = high density polyethylene
PVC = polyvinyl chloride

Penetrations have been installed for a number of different purposes including: irrigation, drainage, potable water supply, gas and oil transportation, and communications. Table 4-7 shows the number of penetrations that fall into each category as recorded in the UCIP database.

Table 4-7. UCIP Documented Penetration Type by Watershed

Penetration Type by Watershed	Penetrations
Sacramento River Total	**5248**
Communication/Electrical	612
Interior Drainage	1312
Drinking water, Reclaimed water, or Wastewater	333
Gas,Oil,Steam, Petroleum, or Chemical	427
Irrigation	1676
Unknown/Other	888
San Joaquin Total	**2361**
Communication/Electrical	178
Interior Drainage	1146
Drinking water, Reclaimed water, or Wastewater	122
Gas, Oil, Steam, Petroleum, or Chemical	69
Irrigation	599
Unknown/Other	247
Grand Total	**7609**

Age of a penetration can impact the integrity of the flood system. As a result, older penetrations tend to be at higher risk of developing issues, especially when not maintained. Table 4-8 shows penetrations age.

Table 4-8. Number of Penetrations by Age and Watershed (per UCIP)

Age in Years, Penetrations by Watershed	Penetrations
Sacramento River Total	**5248**
Less than 10	117
10 to 20	266
20 to 30	384
30 to 40	363
40 to 50	574
Greater than 50	3544
San Joaquin Total	**2361**
Less than 10	17
10 to 20	115
20 to 30	207
30 to 40	150
40 to 50	821
Greater than 50	1051
Grand Total	**7609**

Penetrations must be permitted via an encroachment permit issued by the Board and USACE. However, since many penetrations were installed prior to the construction of the levees, or before the levee was included in the flood control system, there are many penetrations that do not have encroachment permits. Penetrations referenced in the Flood Control System Operations and Maintenance manuals may have been issued an Automatic Board Order, but this was not done in many cases. As a result, there are numerous penetrations without an associated permit. Table 4-9 shows the current UCIP information regarding which penetrations encroachment permits.

Table 4-9. UCIP Penetration Permit Status by Watershed

Watershed	Permitted	Shown in O&M/ As-Builts	Unknown*
Sacramento River	3194	1136	918
San Joaquin	766	1064	531
Grand Total	**3960**	**2200**	**1449**

Note:
*Unknown penetrations do not currently have a permit referenced in UCIP records.

In addition, available information from maintaining agencies, permit records, and field inspections has been used to determine if a penetration is currently used, is abandoned, or has been removed. UCIP keeps track of current and former penetrations that could lead to levee integrity issues in the future. For additional information on recent levee remedial actions, ongoing and planned remedial actions, and ongoing actions to improve future evaluations, see Appendix A, Section A-7.

Levee Penetration Sites

Left Bank Levee	Right Bank Levee
▲	●

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on
the left or right side of a person who is facing downstream.

Figure 4-19. Levee Penetrations in the Sacramento River Watershed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-20. Levee Penetrations in the San Joaquin River Watershed

4.7 Levee Vegetation

This section discusses vegetation management on levees (channel vegetation management is discussed in Section 5.2). Levee vegetation policy is described in greater detail in CVFPP.

State and federal agencies have differing perspectives on levee vegetation criteria and the extent to which levee vegetation policies have evolved over time. The following reflects DWR's perspective on levee vegetation criteria.

4.7.1 Vegetation Policy Development

When the Memorandum of Understanding between USACE and the Board was signed for the Sacramento River Flood Control Project in 1953, woody vegetation was already an integral component of the levees. For many decades, USACE's approach to vegetation on levees was to allow some vegetation, willows, and other suitable growth, where this vegetation could prevent erosion and wave wash. The Sacramento River Flood Control Project and Lower San Joaquin River and Tributaries Project Standard O&M manuals allow some vegetation to remain on levee waterside slopes to prevent erosion and wave wash (USACE, 1955a and USACE, 1959).

Over the last decade, USACE's enforcement of its policies regarding vegetation on levees has become more stringent. In April 2007, a Draft USACE White Paper provided specific guidance for USACE best management practices for vegetation management. In April 2009, USACE issued ETL 1110-2-571, Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures (USACE, 2009b). These guidelines limit growth (brush, weeds, or trees) to smaller than 2 inches in diameter.

However, implementation of USACE's guidelines would have resulted in large-scale removal of and extensive environmental damage to Central Valley's remaining riparian and shaded riverine aquatic habitat, the majority of which exists along levees. Furthermore, no scientific evidence was used to support that removal of vegetation from the levees would reduce flood risk and increase public safety.

In August 2007, DWR and the Board created the California Levees Roundtable, a partnership of maintaining agencies, USACE, FEMA, and resources agencies to generate procedures for vegetation management that are supported by the regulatory agencies and allow maintaining agencies to fulfill their public safety responsibilities. To address levee visibility and inspection issues presented by vegetation on levees, DWR adopted Interim Levee Vegetation Inspection Criteria in fall 2007 (DWR, 2007). These criteria were used temporarily while research on the impacts of vegetation on levees was conducted and the agencies worked to establish agreed upon criteria. On February 27, 2009, the California Levees Roundtable issued a joint collaborative document titled California Central Valley Flood System Improvement Framework (California Levee Roundtable, 2009), which provided interim guidance on best vegetation management practices. The California Central Valley Flood System Improvement Framework was later used as the basis for the comprehensive Vegetation Management Strategy (VMS) now in use. The VMS was also included in the 2012 CVFPP.

USACE continued to receive feedback on their levee vegetation management policies and conduct long-term program reviews and changes such as for PL 84-99 Rehabilitation Program. This program provides federal funds to repair levees after a flood event to local levee districts. On March 24, 2014, USACE issued new interim guidance to sponsors regarding the eligibility requirements for the PL 84-99 Rehabilitation Program. The new interim guidance states, “Vegetation on levees is no longer a criterion for determining Program eligibility.”

This revision carried over into other USACE guidelines. On April 30, 2014, USACE issued ETL 1110-2-583, an update to the Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures (USACE, 2014). In this ETL, USACE updated the applicability as follows: “…This ETL is not applicable to determinations for eligibility in the Rehabilitation Program (previously called the Rehabilitation and Inspection Program) under ER 500-1-1 and the provisions of Public Law 84-99.” All other provisions in the 2014 ETL are the same as the 2009 ETL.

DWR continues to conduct research and to move forward to refine vegetation management practices, such as developing the Levee Tree Assessment (DWR, 2015c) that is discussed further in the next section. Details about the VMS developed in 2012 are further developed in the 2017 CVFPP Update’s Conservation Strategy (Appendix D – Vegetation Management Strategy).

4.7.2 Levee Tree Assessment Process

The 2012 CVFPP VMS identified specific levee zones where existing vegetation would remain or be managed. The VMS also specified that remaining levee vegetation be evaluated to determine if it posed an unacceptable threat to levee integrity and removed, if determined to be such a threat. Although a key component of the VMS, the 2012 CVFPP did not specify how to identify vegetation that posed an unacceptable threat to levee integrity, and it did not describe management actions, other than tree removal, to address unacceptable threats.

In order to provide more specificity to the VMS, DWR has been developing the Levee Tree Assessment (DWR, 2015c). to identify levee vegetation (specifically trees) that may pose an unacceptable threat to levee integrity. The Levee Tree Assessment (DWR, 2015c) describes criteria where trees could threaten levee integrity, and may therefore require management to reduce or eliminate threats. These criteria reflect the best available scientific information regarding the mechanisms by which trees may threaten levee integrity, along with decades of on-the-ground experience managing levee vegetation.

The Levee Tree Assessment (DWR. 2015c) provides levee maintainers with more detailed guidance for implementing the VMS, and provides a more nuanced approach to managing trees on levees.

The VMS now in use allows Central Valley levees to retain acceptable maintenance ratings and PL 84-99 rehabilitation eligibility as long as levee trees and shrubs are properly trimmed and spaced to allow for visibility, inspection vehicles, and floodfight access.

The VMS discussed in the Conservation Strategy refined DWR's levee vegetation inspection criteria for visibility and accessibility, and forms the primary basis for identifying levee vegetation problems. This criteria along with the USACE ETL 1110-2-571, established the concept of the vegetation management zone (VMZ). The VMZ is the area on and near a levee in which vegetation is managed for visibility and accessibility; the VMZ also provides some habitat value over the life span of woody vegetation.

More specific details about managing vegetation under a variety of levee conditions can be found in the 2017 CVFPP Update's Conservation Strategy (Appendix D – Vegetation Management Strategy). Table 4-10 lists levee inspection rating descriptions for vegetation on earthen levees.

Table 4-10. Levee Inspection Rating Descriptions for Vegetation on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	The levee has no unwanted vegetation (brush, bushes, and undesirable weeds) blocking visibility or access; vegetation is maintained per DWR's Vegetation Criteria.
Minimally Acceptable (M)	Tall grass, weeds, brush or other vegetation partially block visibility of or access to the levee and/or 15 feet or the limit of the easement at the landside toe and 20 feet from shoulder down the waterside of the levee.Tall grass, weeds, or brush partially block visibility of or access to the levee and/or are within 10 feet of the landside toe.
Unacceptable (U)	Tall grass, weeds, brush or other vegetation completely block visibility of or access to the levee and/or to 15 feet or the limit of the easement at the landside toe and also 20 feet from shoulder down the waterside of the levee. Tall grass, weeds, or brush completely block visibility of or access to the levee and/or are within 10 feet of the landside toe.

Source: DWR, 2010b

Note:

See Appendix A-8, Figure A-31, for schematic showing *DWR Interim Vegetation Inspection Criteria for Standard Levees*, October 2007.

Table 4-11 lists the levee inspection rating descriptions for trimming or thinning trees on earthen levees.

Table 4-11. Levee Inspection Rating Descriptions for Trimming/Thinning Trees on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	Any trees on the levee or the landside easement are trimmed up at least 5 feet above the levee slope and spaced enough to allow visibility and flood fight access. All trees are maintained per DWR's Vegetation Criteria.
Minimally Acceptable (M)	Moderate density of limbs, leaves, or the trees themselves are partially obstructing visibility and flood fight access to the landside levee slope and/or within the landside easement, and and 20 feet from shoulder down the waterside of the levee.
Unacceptable (U)	Significant density of limbs, leaves, or the trees themselves are completely obstructing visibility and flood fight access to the landside levee slope and/or within the landside easement, and 20 feet from shoulder down the waterside of the levee.

Source: DWR, 2010b

Note:

See Appendix A-8, Figure A-31, for schematic showing *DWR Interim Vegetation Inspection Criteria for Standard Levees*, October 2007.

Levee vegetation data were not considered in the assignment of the ULE and NULE overall hazard classifications and categorizations, respectively. However, levee vegetation data are included in this 2017 FSSR because ongoing research is evaluating the potential impact of levee vegetation on levee integrity.

4.7.3 Limitations of Status Evaluations

Reported levee vegetation conditions are based on inspections and assessments relative to the 2015 DWR Annual Inspection Report (Appendix D, Vegetation Management Strategy).

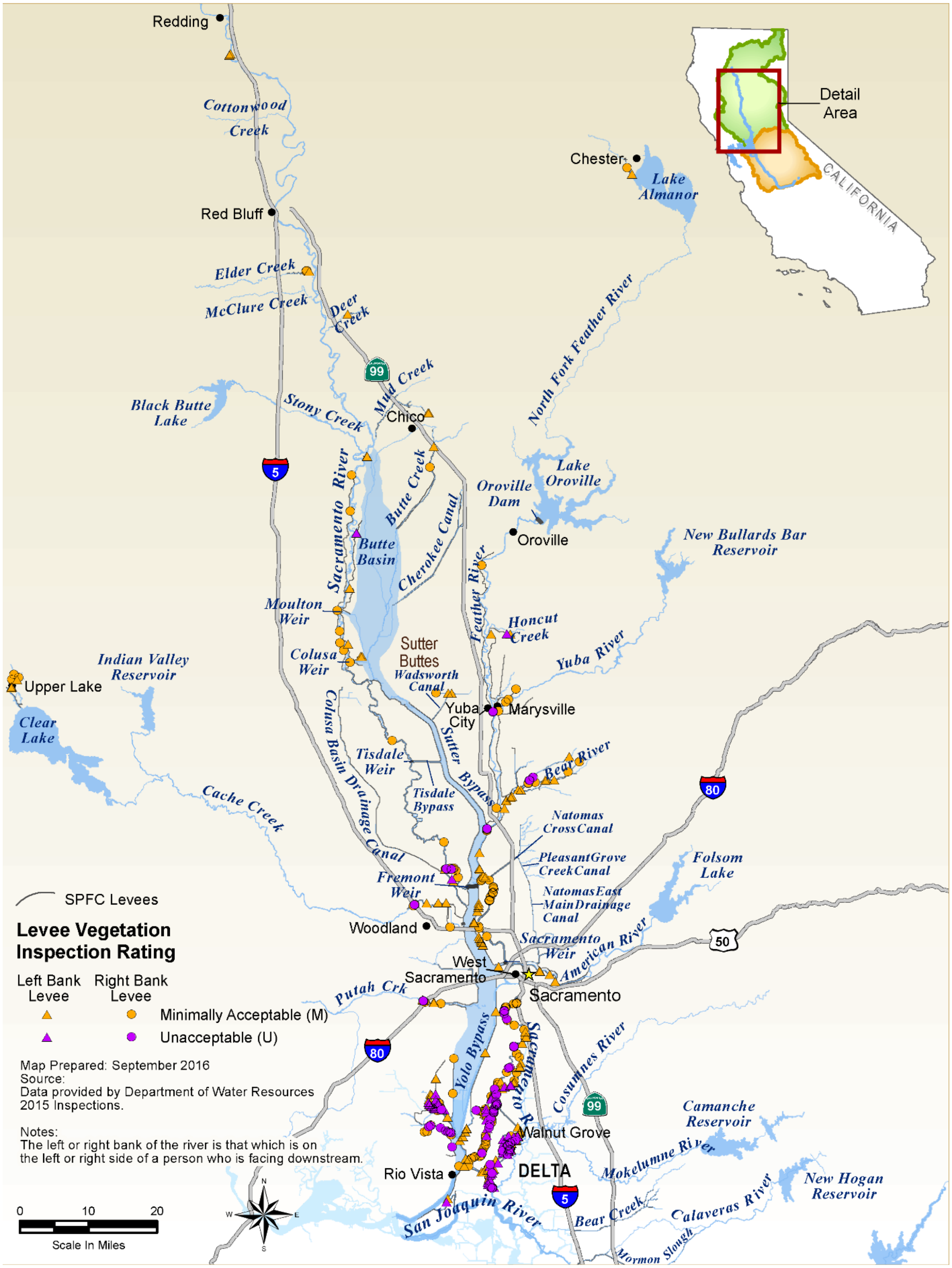
4.7.4 Results of Status Evaluations

Inspection results reflect vegetation and trimming/thinning trees levee inspection ratings from the 2015 Annual Inspection Report (DWR, 2015a), updated by data collected from DWR's additional site visits in 2015. Unacceptable and Minimally Acceptable inspection ratings for vegetation and trimming/thinning trees maintenance issues are shown in Figures 4-21 through 4-24 for the Sacramento and San Joaquin river watersheds.

In 2015 there were 111 miles of unacceptable and nearly 200 miles of minimally acceptable vegetation and tree trimming/thinning issues in the Sacramento and San Joaquin river watersheds. These issues alone account for nearly 42 percent of all identified issues within the system. This is not uncommon and has consistently been the most pervasive issue that maintaining agencies have to deal with. Of the 1,571 identified vegetation and trimming/thinning trees related issues, only 1,034 were determined to be the responsibility of the LMA, and were therefore used to assess their overall performance as maintainers. The remaining 537 issues were identified as enforcement issues, meaning someone other than the LMA is responsible for addressing them. These enforcement issues are typically not high priority and are not addressed until other higher priority violations have been resolved. Due to limited resources, Board enforcement staff address violations in a worst-first manner. To address these relatively minor issues, the Board enforcement section would need to be funded for additional staff.

Because habitats for federal and State listed species can be located on the levees, managing vegetation on levees can be complex and challenging. Appropriate vegetation management often requires environmental permitting because of these habitat concerns. DWR continues to work with the regulatory agencies to provide permitting coverage for O&M activities to reduce impacts on federal and State listed species while maintaining the safety and integrity of the flood control system.

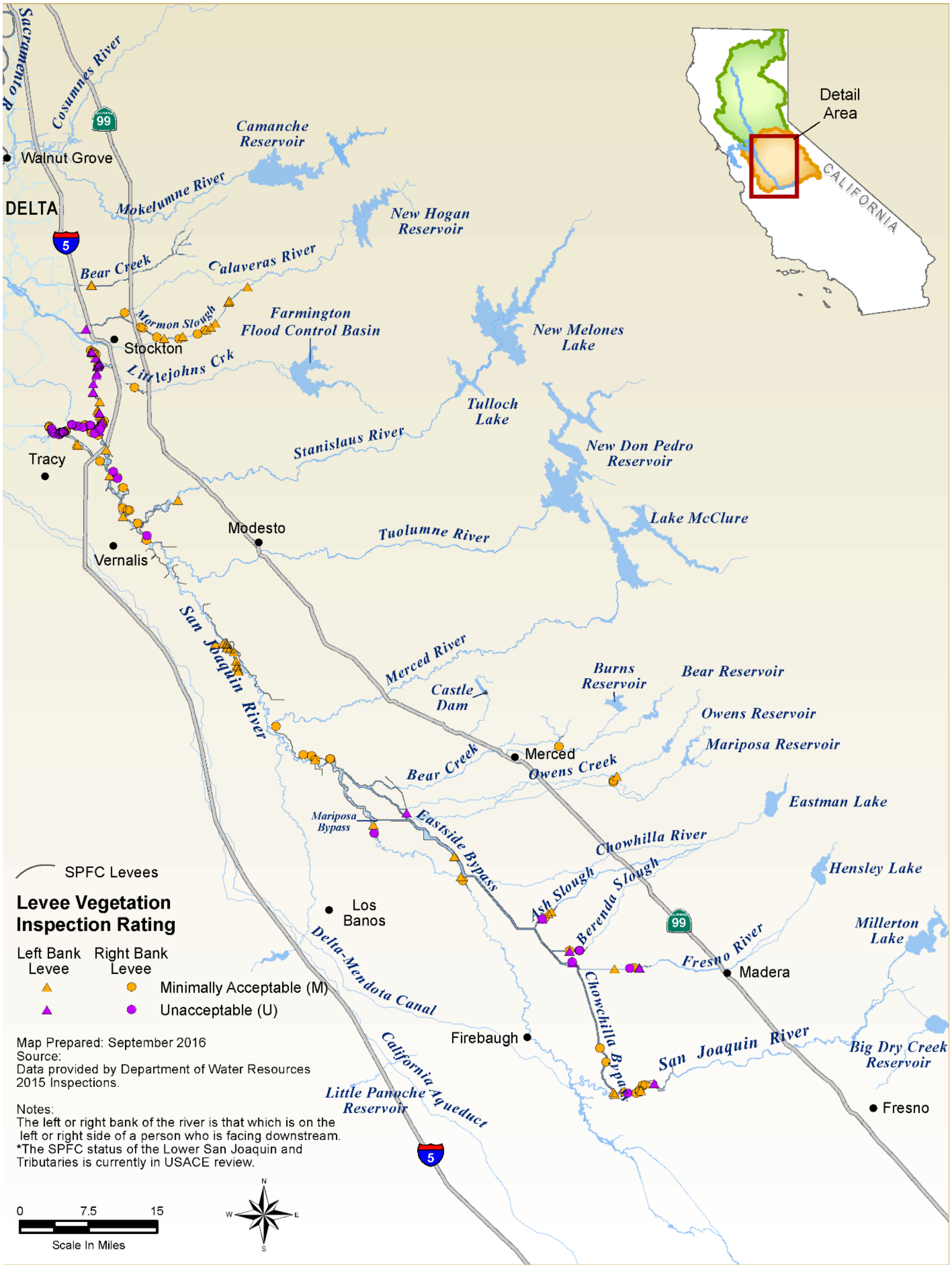
Additional information on recent, ongoing, and planned levee remedial actions, and ongoing actions to improve future evaluations of levee vegetation problems is included in Appendix A, Section A-8. Also, USACE periodic inspection results for levee vegetation growth (based on USACE levee vegetation inspection criteria) in 110 USACE levee systems are included in Appendix A, Section A-1.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.

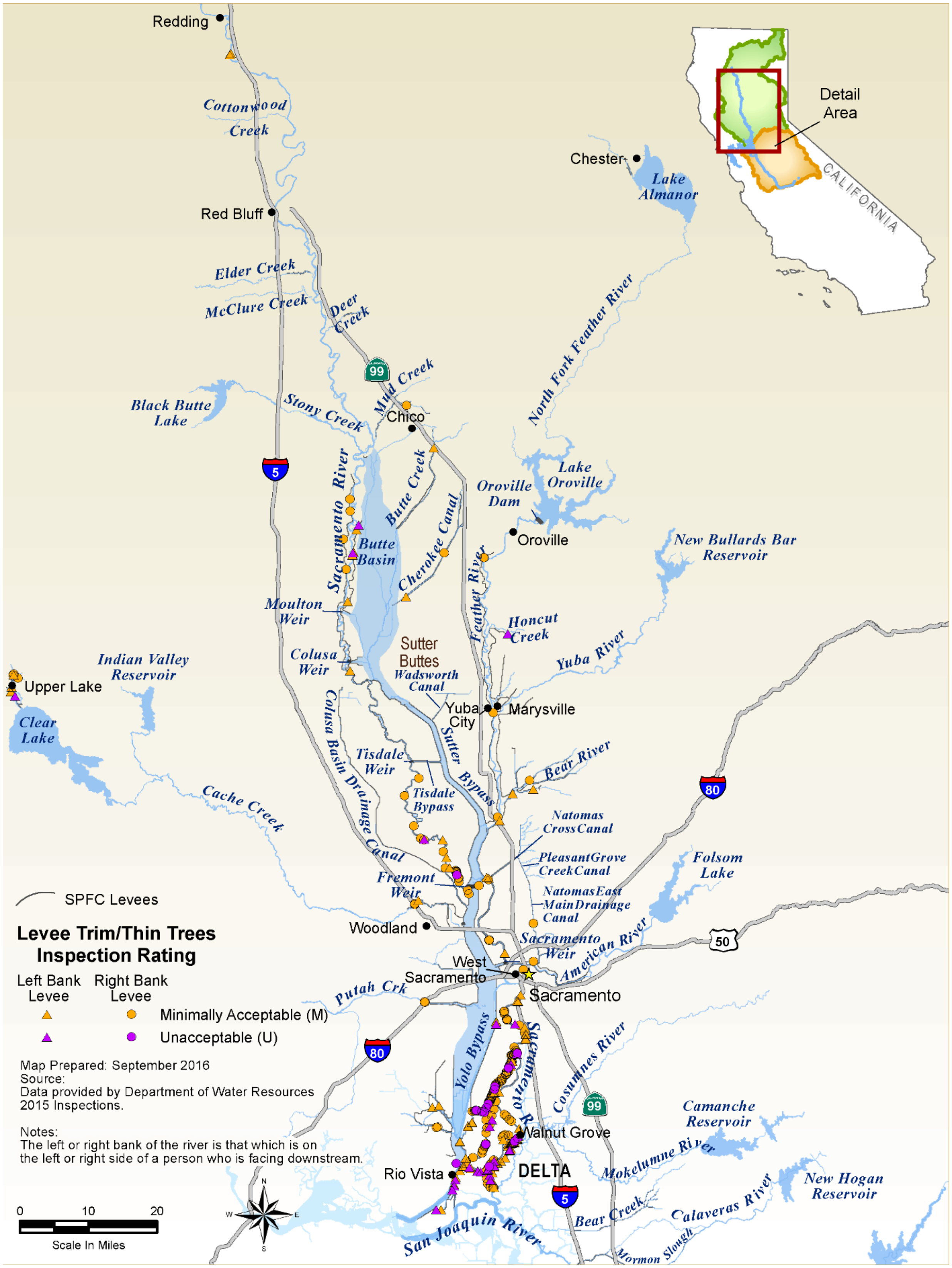
Figure 4-21. 2015 Levee Vegetation Inspection Ratings in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-22. 2015 Levee Vegetation Inspection Ratings in the San Joaquin River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.

Figure 4-23. 2015 Trimming/Thinning Trees Inspection Ratings in the Sacramento River Watershed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-24. 2015 Trimming/Thinning Trees Inspection Ratings in the San Joaquin River Watershed

4.8 Burrowing Animal Damage

Animal burrows can increase seepage through a levee

SPFC levees may be damaged by animals creating burrows to form tunnels and galleries. These tunnels and galleries can be isolated or interconnected, depending on the animal species. The void spaces created by animal burrows can cause a preferential seepage path through a levee, promote surface and internal erosion, and reduce the strength of levee embankment and foundation materials by increasing pore water pressure. Large burrows and dens can also eventually collapse, inducing internal zones of low strength within a levee, reducing its stability and internal erosion resistance. Collapse of large void spaces creates sinkholes at the surface, which could lead to levee breaches if the collapse occurs during high water (see also Section 4.5, Settlement).

Burrowing animal damage to SPFC levees can worsen because of deferred repairs or maintenance and other factors, such as land use adjacent to levees. While it is infeasible to eliminate all burrows from SPFC levees, maintaining agencies implement animal burrow control programs that reduce active burrowing and fill existing burrows. The specific type of control method used varies among maintaining agencies, and includes the following: grouting burrows, excavating and filling burrows, baiting, and others. Recent new scientific knowledge and expert opinion have recently highlighted that protected wildlife species may potentially use burrows in levees in certain situations. This will likely require additional environmental permitting that has not been required in the past (e.g., giant garter snake in the Sacramento Valley).

4.8.1 Status Evaluation Methodology

DWR conducted an Animal Burrow Hole Persistence Study on SPFC levees using data from biannual DWR inspections from 1984 to 2008 (DWR, 2009b). The metric used to assess animal activity in the study was cumulative occurrences of documented burrowing activity over time. Occurrences of documented burrowing activity include the presence of burrow holes on levee slopes or direct animal sighting. It was assumed that repeated documented animal burrows at a given location during a series of biannual inspections indicates animal activity persistence and, as a result, a higher degree of structural damage in embankments than at levee locations with lower numbers of documented burrows over time.

Statistical analysis was used to categorize levels of animal burrow hole persistence as the lower, middle, and upper third of the distribution (i.e., low, medium, and high persistence). Levels of persistence are described in Table 4-12. For more details about the study, refer to the Assessment of Animal Burrow Hole Persistence on Project Levees Technical Memorandum (DWR, 2009b).

Table 4-12. Animal Burrow Hole Persistence Levels

Animal Burrow Hole Persistence Levels[1]	Cumulative Occurrences of Documented Burrowing Activity per Levee Unit	Total Levee Miles
No Activity[2]	0	184
Low Persistence	1 – 3	350
Medium Persistence	4 – 7	382
High Persistence	8 or higher	543
No Data[3]	No data	108

Notes:

1 The Animal Burrow Hole Persistence Study included 42 biannual DWR inspection records spanning 21 years, from 1984 to 2008. Records for 1988, 1990, 1991, and 1993 inspections were not available (DWR, 2009b).

2 No Activity represents levee reaches for which no occurrences of documented burrowing activity were found in inspection reports, but for which documented occurrences were found elsewhere within the same levee unit.

3 No Data represents entire levee units for which there were no data in the inspection reports. It is unknown whether the lack of data along these levee units was an indication of absence of activity or a reflection of problems observing animal activity in these areas.

As described in Section 3.3, animal burrow persistence data were not considered when assigning ULE overall hazard classifications. However, burrow hole persistence data were considered in assigning NULE through seepage hazard categorizations.

4.8.2 Limitations of Status Evaluations

Levee inspections only document the presence (or absence) of animal burrows and do not measure burrow hole density, hole diameter, or structural damage to levees.

To facilitate analysis, data were grouped together by reach for levees with similar burrowing activity, land use, and physical features in and around the levee. However, this grouping may not capture variability in animal burrowing activity at small scales (i.e., 1 to 3 miles). Furthermore, more recent efforts of maintaining agencies may have changed conditions since the study was completed in 2009.

Some burrowing animals tend to be more damaging to levees (e.g., creating deeper, more penetrating burrows) than others; however, the type of burrowing animal in any particular area generally was not documented within the levee inspection reports. The study did not address burrows and dens associated with large rodents, such as muskrats and beavers. These species usually do not burrow directly into levee slopes, but prefer to construct the entrances to their dens under water, which may be within the levee prism with no visible sign of a burrow on the levee slope.

Records covering only 1,459 miles of approximately 1,600 total miles of SPFC levees contained information about burrowing activity. An additional 108 miles corresponded to entire levee units for which there were no data in the inspection reports (i.e., the “No Data” level). It is unknown whether the lack of data along these levee units was an indication of an absence of activity, a reflection of problems observing animal activity in these areas, or whether inspection data were not available for some other reason.

Animal persistence data were collected from levee inspections that are traditionally performed from a moving vehicle. For a variety of reasons, inspectors do not normally exit their vehicles to observe and document animal burrows. Visual inspection from a moving vehicle is not as effective for gathering information as foot surveys, and may lead to some underreporting of burrows. Certain maintenance measures, such as levee dragging and crown road grading, can also cover burrows on the surface, making underlying burrows difficult to observe during an inspection. Over time, this leads to levees that appear to lack any burrows on the surface, but instead may have internal burrows within the levee embankment.[11]

4.8.3 Results of Status Evaluations

Figures 4-25 and 4-26 show results for the DWR Animal Burrow Hole Persistence Study for the Sacramento and San Joaquin river watersheds, respectively (DWR, 2009b). More than one-third of the 1,459 miles of SPFC levees studied had high persistence (at least eight reported incidences of burrowing activity over the 21-year study span of inspection results).

Additional information on animal control inspection results, recent, ongoing, and planned levee remedial actions for burrowing animal damage, and ongoing actions to improve future evaluations is included in Appendix A, Section A-9. Also, USACE periodic inspection results on animal control for 10 USACE levee systems are included in Appendix A, Section A-1.

4.9 Encroachments

Encroachments are any obstruction or physical intrusion by construction of works or devices, planting or removal of vegetation, or caused by any other means, for any purpose, into a flood control project, waterway area of the flood control project, or area covered by an adopted plan of flood control (Title 23 of the California Code of Regulations, Chapter 1, Article 2, Section 4 (m)). Encroachments include boat docks, ramps, bridges, sand and gravel mining, placement of fill, fences, retaining walls, pump stations, residential structures, and irrigation and landscaping materials/facilities. Standard procedure is for the Board to obtain USACE approval before issuing an encroachment permit. More than 18,000 encroachment permits have been issued by the Board since its inception. A permit may be for a single encroachment or multiple encroachments. Many current encroachments are properly maintained. However, numerous permitted encroachments are not properly maintained, and numerous unpermitted encroachments exist on or within SPFC levee rights-of-way.

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[11] This observation is verified by DWR's experience in grouting burrowing animal holes, such as on Cache Creek. In the first year of the grouting program, the grout takes were large because grout going into one burrow flowed to many other interconnected burrows. In subsequent years, grout take decreased because only the new burrows required grout.

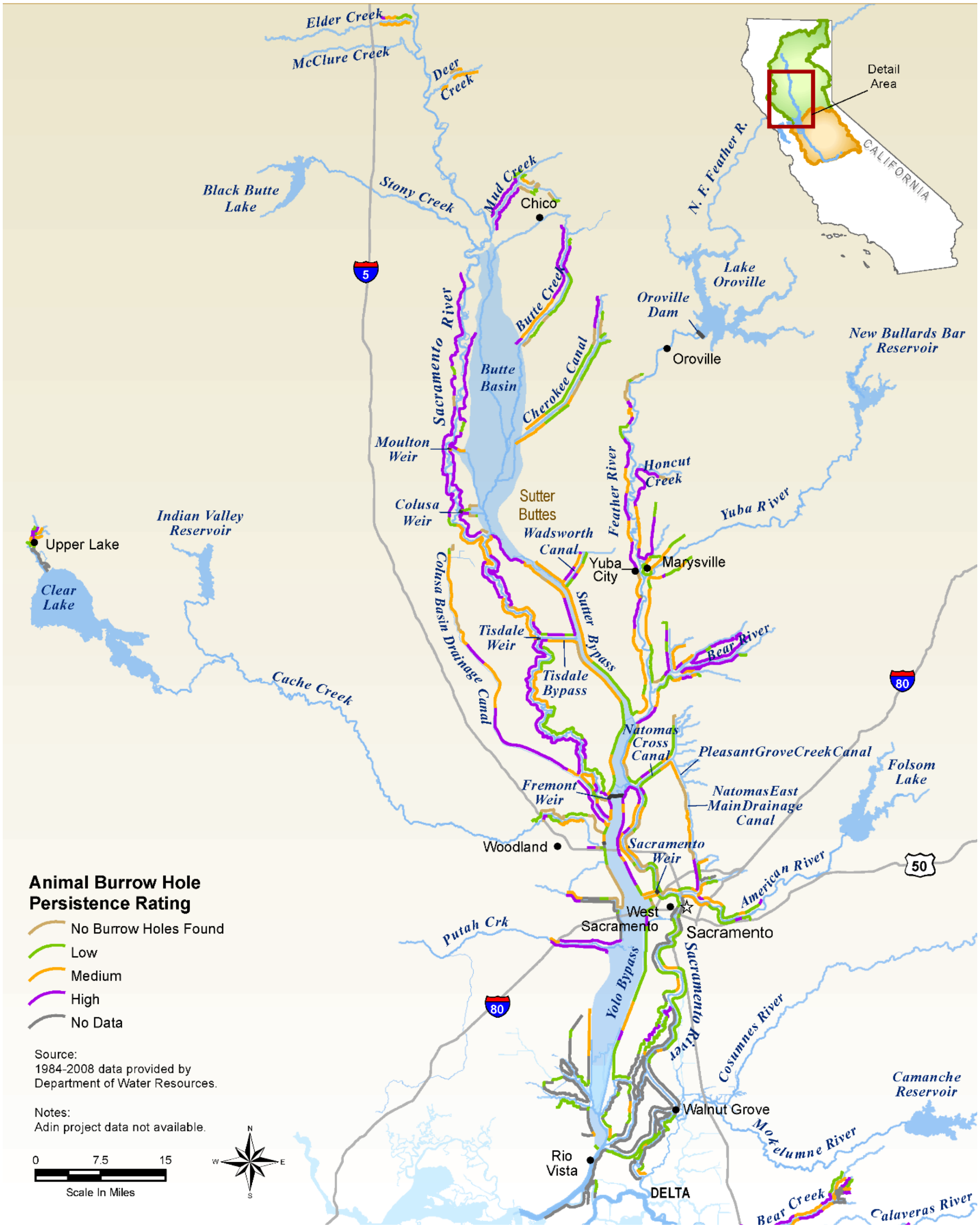
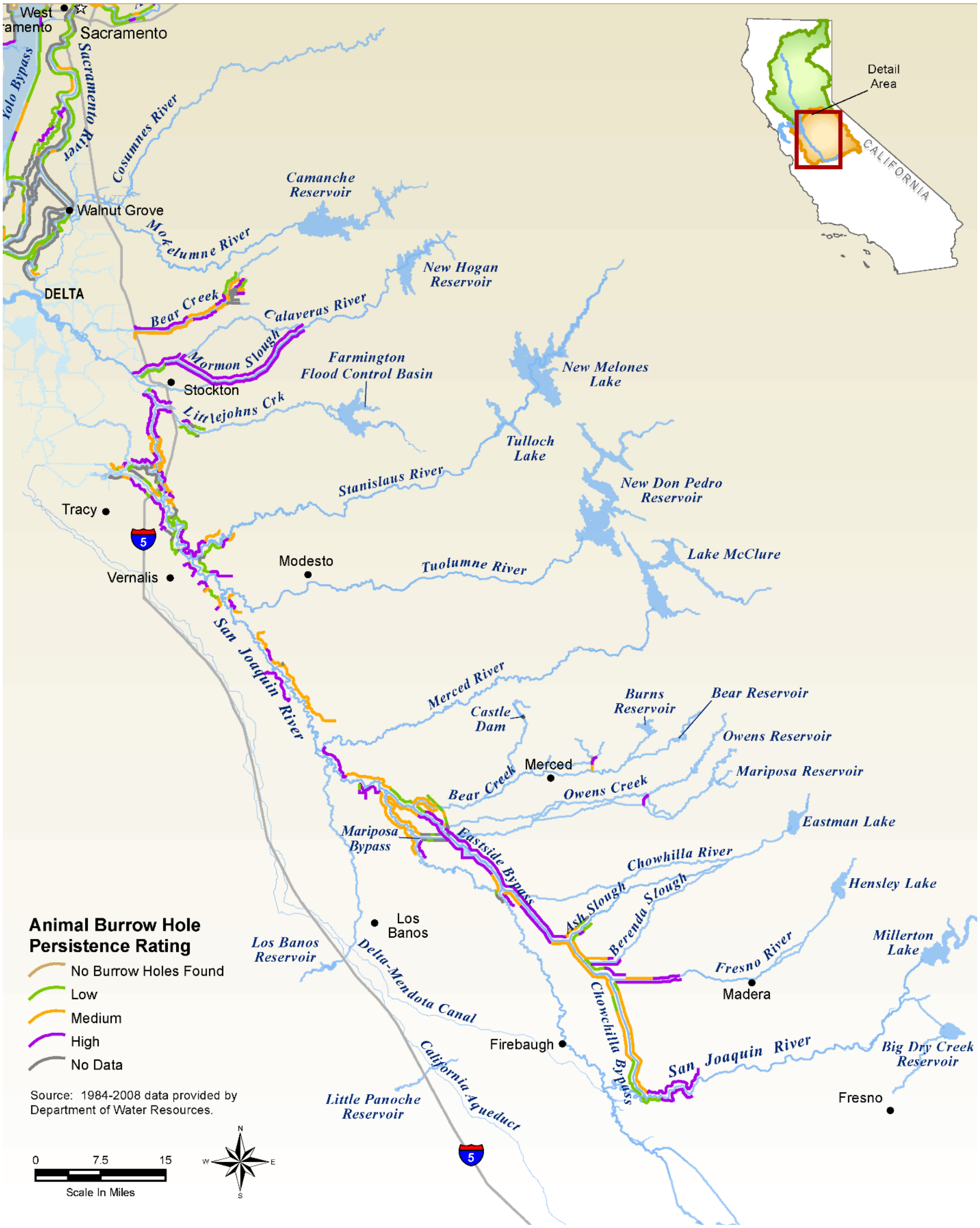


Figure 4-25. Animal Burrow Hole Persistence in the Sacramento River Watershed



Source: 1984-2008 data provided by Department of Water Resources.

Figure 4-26. Animal Burrow Hole Persistence in the San Joaquin River Watershed

Encroachments can interfere with floodfighting, inspection, and maintenance

Unmaintained or unpermitted encroachments often jeopardize levee integrity and can interfere with floodfighting, inspection, and maintenance. Although adverse impacts to levees from encroachments can be associated with deferred maintenance, some encroachments posing a geotechnical hazard fall outside the jurisdiction of maintaining agencies to remediate because the encroachment may be Board-permitted or other factors may prevent maintaining agencies from taking action.

DWR has completed its ULDC (DWR, 2012a), which includes encroachment criteria for urban levee design.

4.9.1 Status Evaluation Methodology

DWR visually inspects SPFC levees for encroachments at least two times per year, and reports results annually. Table 4-13 shows DWR inspection rating descriptions for encroachments on earthen levees, used for annual inspections in 2015.

DWR documents and rates three types of encroachments:

- Encroachments that threaten levee integrity
- Encroachments that are inappropriately placed on a levee, such as trash, prunings, or equipment
- Encroachments that obstruct visibility and access

Table 4-13. Summary of Levee Inspection Rating Descriptions for Encroachments on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	No trash or debris present. No excavation, structures, or other encroachments threaten levee integrity. No encroachments obstruct visibility or access to the levee or landside toe easement.
Minimally Acceptable (M)	Minimal trash or debris present. Minor excavation, structure, or other encroachments pose minor threat to levee integrity.
Unacceptable (U)	Significant trash or debris present. Major excavation, structure, or other encroachments pose major threat to levee integrity.
Acceptable/Watch/Monitor (A/W)	This rating is used to document issues found during inspections that do not yet warrant an M or U rating but that should be monitored or maintained to avoid a maintenance deficiency in the future.
Corrected (C)	The deficiency noted previously has been corrected.

Note:
This is a summary table of the extensive encroachment rating criteria descriptions found in Appendix G of the 2015 Inspection and Local Maintaining Agency Report. Source: (DWR, 2015b)

Inspections completed from 2007 through 2011 rated the first two encroachment types as either Minimally Acceptable (M) or Unacceptable (U). The first two types of encroachments are generally included in the overall ratings and should generally be corrected by the maintaining agencies. The third type of encroachment that the USACE identified as unacceptable may be beyond the current authority of the maintaining agencies to correct because the encroachment may be Board permitted or have other factors associated with it that prevent maintaining agencies from taking action. These Partially Obstructing (PO) and Completely Obstructing (CO) encroachments are not included in the overall ratings (A, M, and U). Instead, they are identified to generate an inventory of those encroachments that the USACE has, in the past, found to be unacceptable and those encroachments that could affect the operation of the system. The permit status of these encroachments may not have been determined.

Since 2012, DWR inspectors have rated all encroachments as A, M, or U and identified as appropriate, an issue type for each. Encroachments that maintaining agencies may not be able to address and would have been previously rated as PO or CO are assigned an issue type of enforcement in all inspections since 2012.

The DWR inspection criterion includes three issue types: Maintenance, Enforcement, and Design/System Obsolescence. The criteria are described as follows:

- **Maintenance** – These issues include animal control, vegetation, and other deficiencies, as described in Appendix G of the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b), where annual maintenance is required by the maintaining agencies to maintain the levees to an acceptable condition to ensure the project will function as designed, intended, or required. Items with this issue type are included the overall ratings.

- **Enforcement** – These issues include encroachments that threaten levee integrity, that are inappropriately placed on the levee, or that obstruct visibility and access during the flood fighting efforts. Some of these encroachments may require enforcement action and may have been permitted by the Board.

- **Design/System Obsolescence** – These issues encompass deficient conditions that may be a part of or a result of the original design and construction of the project. These conditions may also be due to the age of the project and require actions beyond the ability of the LMA. Items of this type are not included in the overall ratings but still need to be addressed.

Not all encroachment issues are documented using these three issue types.

As discussed in Section 3.3, encroachment data were not considered in the assignment of ULE hazard classification or NULE hazard categorization. Detailed assessments or surveys of encroachments were beyond the scope of the DWR Levee Evaluations Program.

4.9.2 Limitations of Status Evaluations

USACE, in cooperation with the Board, has developed a web-based GIS (eGIS) database of historical encroachment permits. However, current inspection reporting does not distinguish between permitted and non-permitted encroachments. It is also difficult for inspectors to determine whether observed encroachments are located within existing easement or right-of-way boundaries. A more thorough evaluation of encroachment status would include a complete inventory of permitted and nonpermitted encroachments and associated documentation, along with project-specific hydraulic modeling to assess the potential impact of encroachments on water surface elevation and levee integrity.

4.9.3 Results of Status Evaluations

The 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b) encroachment inspection ratings are shown in Figures 4-27 through 4-30 for the Sacramento and San Joaquin river watersheds, respectively (DWR, 2015).

Minimally Acceptable and Unacceptable ratings with a maintenance issue type are shown in Figures 4-27 and 4-28. Inspection results include 235 encroachment sites identified as minor threats to levee integrity (i.e., Minimally Acceptable) and 24 encroachment sites identified as major threats to levee integrity (i.e., Unacceptable). Encroachment sites may consist of multiple individual encroachments.[12]

Minimally Acceptable and Unacceptable ratings with an enforcement issue type are shown in Figures 4-29 and 4-30. Inspection results include 1,096 encroachment sites identified as minor threats to levee integrity (i.e., Minimally Acceptable) and 372 encroachment sites identified as major threats to levee integrity (i.e., Unacceptable).

Minimally Acceptable and Unacceptable ratings with a design/system obsolescence issue type are shown in Figure 4-27. Inspection results include two encroachment sites identified as minor threats to levee integrity (i.e., Minimally Acceptable) and zero encroachment sites identified as major threats to levee integrity (i.e., Unacceptable). Additional information about recent, ongoing, and planned levee remedial actions for encroachments and ongoing actions to improve future evaluations is included in Appendix A, Section A-10. Also, USACE periodic inspection results on encroachments for 10 USACE levee systems are included in Appendix A, Section A-1.

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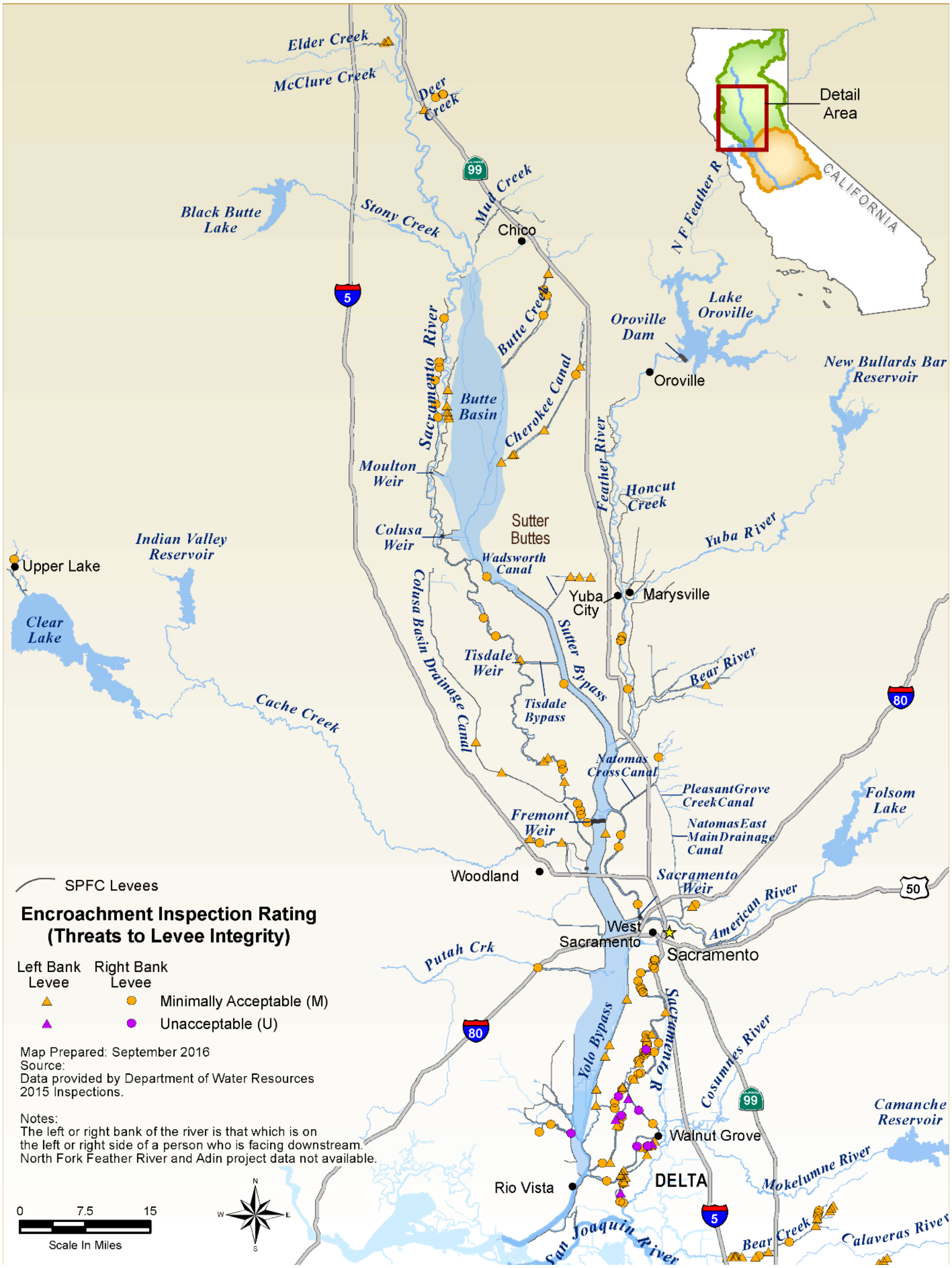
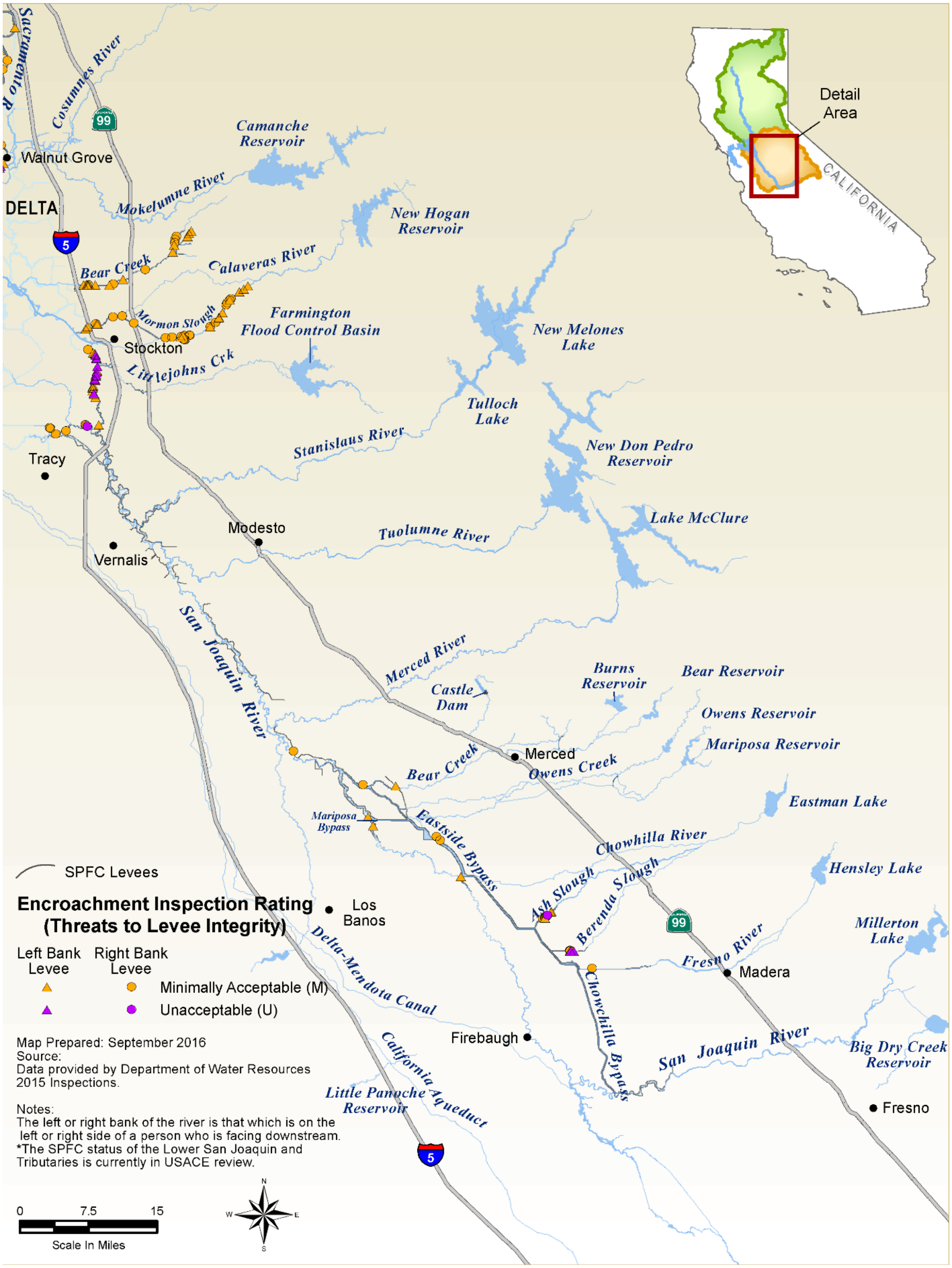
[12] Annual DWR inspections rate both individual encroachments and ranges of multiple adjacent encroachments. These ranges vary in length, but are rarely longer than a mile. Since ranges less than a mile long are difficult to identify at the map scale shown, all encroachment sites (both ranges and individual encroachments) are shown as points on the map.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
North Fork Feather River and Adin project data not available.

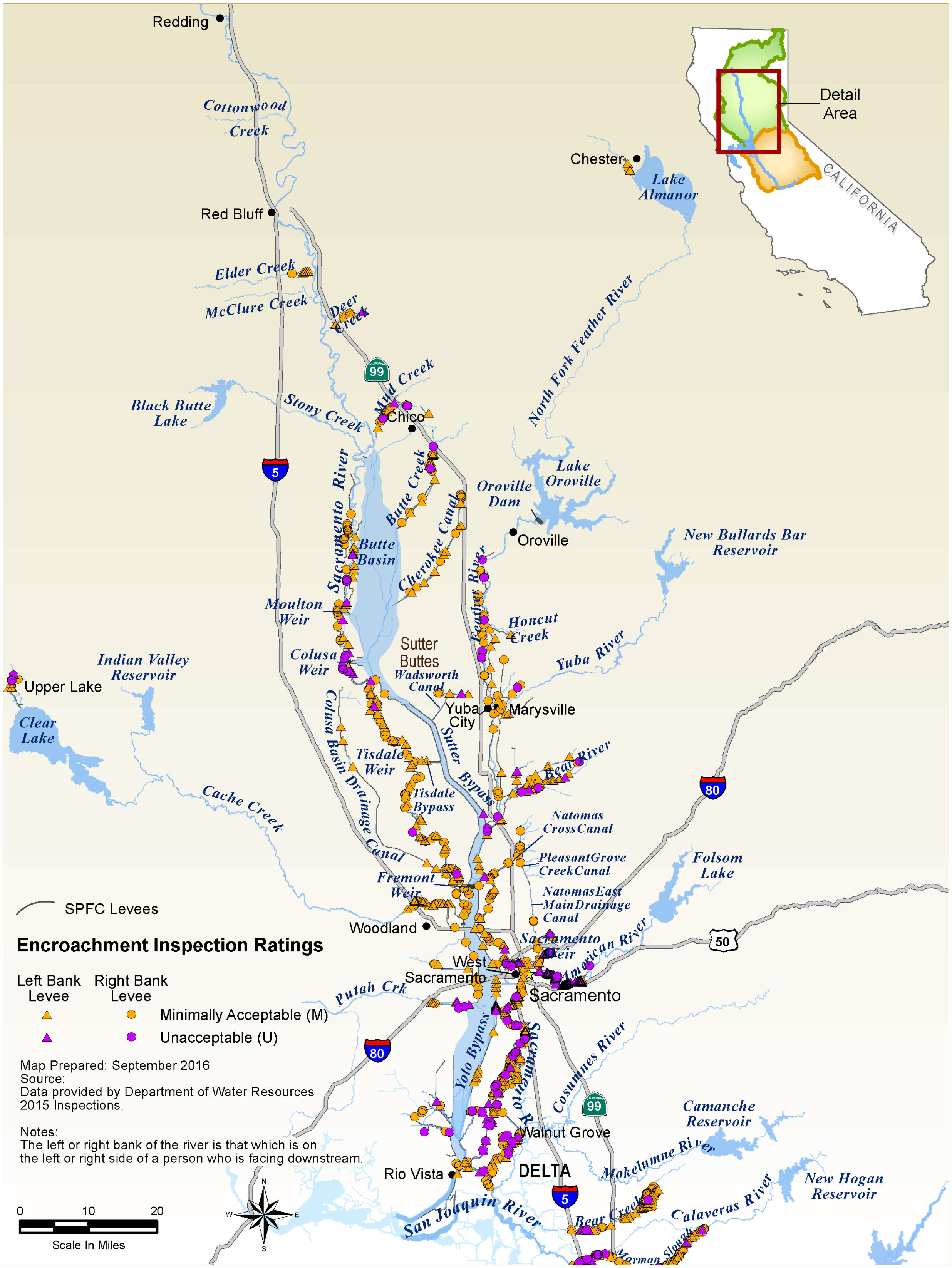
Figure 4-27. 2015 Encroachment Inspection Ratings in the Sacramento River Watershed (Maintenance Issue Type)



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

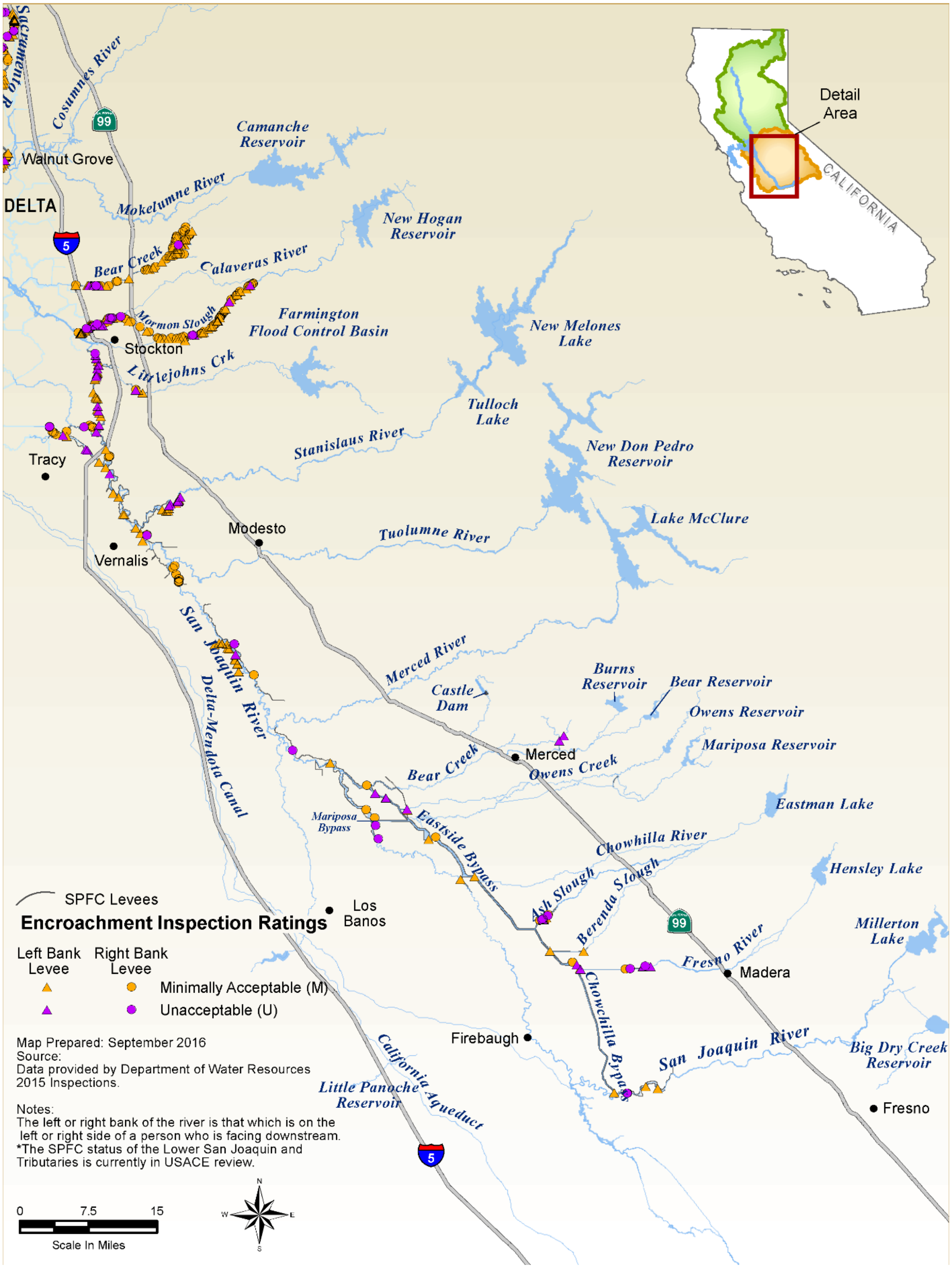
Figure 4-28. 2015 Encroachment Inspection Ratings in the San Joaquin River Watershed (Maintenance Issue Type)



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.

Figure 4-29. 2015 Encroachment Inspection Ratings in the Sacramento River Watershed (Enforcement and Design/System Obsolescence Issue Type)



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 4-30. 2015 Encroachment Inspection Ratings in the San Joaquin River Watershed (Enforcement Issue Type)

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5.0 Channel Status

Channel conveyance capacity can be reduced by a number of factors. These factors can be the result of conditions in the channel, such as vegetation growth in the channel, sediment deposited in the channel, encroachments in the channel, bank erosion, revetments, and bank caving. Levee conditions such as lack of freeboard due to localized settlement, erosion, or original levee design can also reduce channel conveyance capacity. Consequently, identifying the causes of channel conveyance problems (and whether they are channel-related or levee-related) often requires additional site-specific investigation that is beyond the scope of this 2017 FSSR. Furthermore, the conveyance capacity of the system is dynamic and therefore needs to be reevaluated at regular intervals.

Estimates of DWR channel conveyance capacity, as presented in this 2017 FSSR, are not based on the same approach as USACE channel conveyance capacity estimates. DWR uses freeboard as an index point to estimate conveyance capacity, expressed as a flow value. USACE uses a risk-based or probabilistic approach to estimate conveyance capacity. While a risk-based approach provides a better indicator of flood risk, this approach has not been used to define performance expectations for SPFC channels. A risk-based approach can sometimes be impractical to use because of limited geotechnical data and dependence of the approach on the hydrological record, which changes dynamically based on new flood events.

This section summarizes channel conveyance capacity conditions, and then discusses channel vegetation and channel sedimentation as two key factors affecting channel conveyance capacity. Other factors that could reduce channel conveyance capacity (such as encroachments in the channel) were not evaluated because supporting data were not available.

5.1 Channel Conveyance Capacity

SPFC channel conveyance capacity has been estimated based on the ability of a channel to pass original design flood flows. Design flood flows (or design channel capacities) from different official sources have been sometimes inconsistent. These discrepancies have complicated the evaluation of channel conveyance capacities throughout the Sacramento and San Joaquin river watersheds.

The basis for evaluating channel conveyance capacity in the Sacramento River watershed was refined several times after the Flood Control Act of 1917. Design flows were later amended by the Flood Control Act of 1928, Senate Document Number 23, the 1953 Memorandum of Understanding between USACE and the Board (USACE and Board, 1953), and the 1957 design profile for the Sacramento River (USACE, 1957a). The profile and associated design capacities were developed based on USACE analysis of the 1937, 1951, and 1955 floods on the Sacramento River at the request of the Board.

In the San Joaquin River watershed (excluding the Mormon Slough Project), original design flows were derived from the Report on Control of Floods, San Joaquin River and Tributaries Between Friant Dam and Merced River (DWR, 1954) and later changed to reflect the 1955 design profile for the San Joaquin River, as shown in Design Memorandum No. 1, San Joaquin River Levees, Lower San Joaquin River and Tributaries Project (1955 design profile) (USACE, 1955b). For SPFC channels in the Mormon Slough Project, design capacities were based on the 1965 design profile (USACE, 1965).

All design profiles for the SPFC are available on the 2017 CVFPP webpage at http://www.water.ca.gov/cvfmp/2017cvfpp.cfm. For channels not delineated in the 1955, 1957, or 1965 design profiles above, design capacities were determined based on as-constructed capacities specified in appendices to O&M manuals provided by USACE.

Design channel capacities were calculated from the design profiles based on steady state, uniform flow hydraulic computations of historical floods using data available at the time. Therefore, design channel capacities were based on a limited hydrological record, were dependent on the boundary conditions assumed, and did not consider variations in flow and depth with respect to time and distance. Furthermore, the design profiles could not account for changes in vegetation and sedimentation patterns within the channels, or flood system improvements that have taken place after the historical floods used to derive the design flood flow capacities. For example, the 1955 historical flood used to determine the 1955 design profile for the San Joaquin River downstream from the Merced River confluence occurred before construction of the San Joaquin River bypass system.

Design channel capacities reported in USACE O&M manuals sometimes do not agree with channel capacities associated with design profiles. This is because USACE created some O&M manuals before the design profiles were adopted. DWR operates and maintains SPFC facilities based on design capacities calculated from the design profiles when available, rather than on design capacities included in the USACE O&M manuals (USACE, 1969). Design channel capacities from both the design profiles and O&M manuals are used as the basis for evaluation of channel conveyance capacities in this 2017 FSSR.

5.1.1 Status Evaluation Methodology

Channel conveyance capacity conditions are evaluated in this 2017 FSSR by comparing estimated capacities under existing conditions (existing capacities) with design channel capacities specified in O&M manuals and design profiles provided by USACE for each SPFC channel.

Existing channel capacities were determined to be the lowest flow rate (limiting capacity) that occurs when the water surface encroaches on a levee low point (on either the left bank or right bank) minus the design freeboard height. It was assumed that when the water surface encroaches on freeboard at a single location, the capacity of the entire reach is compromised. Therefore, the reported capacity for each reach or a segment of a reach is the limiting capacity for that section. The channel capacity performances for the systems reflect the above assumption and are presented in Figure 5-3 for the Sacramento River and in Figure 5-4 for the San Joaquin River systems, respectively. The data source for each existing channel capacity is listed by reach in Appendix B, Tables B-1 and B-2.

Freeboard requirements were established from the USACE report entitled “Standard Operations and Maintenance Manual for the Sacramento River Flood Control Project,” dated May 1955. Freeboard was established due to uncertainties in hydrology and ever-changing channel conditions. For all riverine streams, 3-foot is the minimum freeboard requirement with exception of flood control bypasses where 6-foot is the minimum freeboard requirement for the Sacramento River system and 4-foot is the minimum freeboard requirement for the San Joaquin River system.

Since publishing the 2011 FCSSR (DWR, 2011c), DWR has acquired new topographic data and stream bathymetric data, developed detailed riverine hydraulic models and hydrological models. To estimate the existing channel capacities for the Sacramento and San Joaquin rivers and their tributaries associated with SPFC levees, hydraulic models developed by the CVFED Program (CVFED, 2009) and hydrology data developed by the Central Valley Hydrology Study were used as the key analytical tools. The CVFED Program hydraulic models included the most up-to-date channel and levee geometry data (based on detailed field surveys) and the flood control structures and their operations for the entire SPFC system. The CVFED Program hydraulic models for the Sacramento and San Joaquin systems extended into the Delta. The downstream boundary elevations accounted for tidal conditions based on the 1997 flood event. This report did not provide channel capacities in the areas influenced by tidal conditions. It should be noted that the channel capacity evaluation effort for the Sacramento and San Joaquin river systems supercedes information developed for the CVFED Program, and is the main informational source for evaluating channel capacities in the 2017 FSSR.

For the 2017 FSSR, the following criteria were used to determine whether estimated existing capacities of the SPFC channels were sufficient to safely convey identified design capacities in the O&M manuals or design capacities calculated from design profiles:

- If the estimate of existing capacity was greater than both the design capacity reported in the O&M manual and the design capacity based on the design profile, channel status was reported as “Sufficient Capacity.”

- If the estimate of existing channel capacity was less than the design capacity reported in the O&M manual, or the design capacity based on the design profile (or both), but less than the top of levee capacity, the channel status was reported as “Potential Encroachment.”

- If the estimate of existing channel capacity was less than the design capacity reported in the O&M manual, or the design capacity based on the design profile (or both), and more than the top of levee capacity, the channel status was reported as “Potential Overtopping.”

- If the estimate of existing channel capacity for a reach depends on backwater flow assumptions, channel status was reported as “Backwater Zone; additional evaluation required.”

  Please note that when referring to figures associated with channel capacities at both the basin and reach specific level, the legend related categories as follows:

  - **Sufficient Capacity** – “Sufficient Capacity”
  - **Potential Encroachment** – “Freeboard Encroachment”
  - **Potential Overtopping** – “Insufficient Capacity”

- **Backwater Zone; Additional Evaluation Required** – "Backwater Influence" or "Undefined." This denotes two separate categories, and legend items and will be specific to reach maps.

5.1.2 Limitations of Status Evaluations

Accuracy of the existing channel capacity estimates in this 2017 FSSR was limited by the topographic and hydraulic modeling performed. Project-specific modeling results generally are less uncertain than systemwide modeling results. Uncertainties associated with estimating current channel capacities throughout the system include vertical datum errors, inaccurate levee crown profiles, arbitrary nature of standard freeboard values, limited calibration data, fixed-bed assumption, wind/wave effects, and unaccounted-for local hydrodynamic effects. Also, differing hydraulic modeling assumptions for boundary conditions, freeboard criteria, and top-of-levee elevations likely contribute to conflicting results among hydraulic modeling evaluations and should be resolved with additional evaluation.

Furthermore, estimates of current channel capacities throughout the system using modeling generally characterizes impedance to flow, and are not designed or intended to evaluate subtle changes in the channels as a result of vegetation, sediment deposition, and/or other obstructions in the channel.

Another uncertainty results from identifying levee low points. In many cases, low levee crown elevations for only a mile or so constrained the capacity of reaches as long as 30 miles. Project-specific modeling of individual reaches could demonstrate that the channel conveyance capacity at one location in a reach is not representative of the entire reach.

Because of these uncertainties, data included in this 2017 FSSR cannot conclusively identify locations of channel conveyance capacity inadequacies, but instead the data identify potential inadequacies requiring additional evaluation.

5.1.3 Results of Status Evaluations

Differences between design capacities reported in O&M manuals and flows associated with the design profiles shown in Figures 5-1 and 5-2 demonstrate the need to resolve discrepancies in some locations. Potential inadequate channel conveyance capacities are shown in Figures 5-3 and 5-4.

For the Sacramento River watershed, approximately four-ninths of the channels show a potential capacity inadequacy and need for additional evaluation, and data are insufficient for approximately one-fifth of the channels. In general, approximately three-fifths of the channels in the San Joaquin River watershed show a potential capacity inadequacy and need for additional evaluation, and data are insufficient for one-eighth. These results will be refined as systemwide and project-specific hydraulic modeling efforts progress. Appendix B, Section B-1, contains tables of the results shown in Figures 5-3 and 5-4.

For additional information about recent, ongoing, and planned remedial actions/improvements, and ongoing actions to improve future evaluations, see Appendix B, Section B-2.

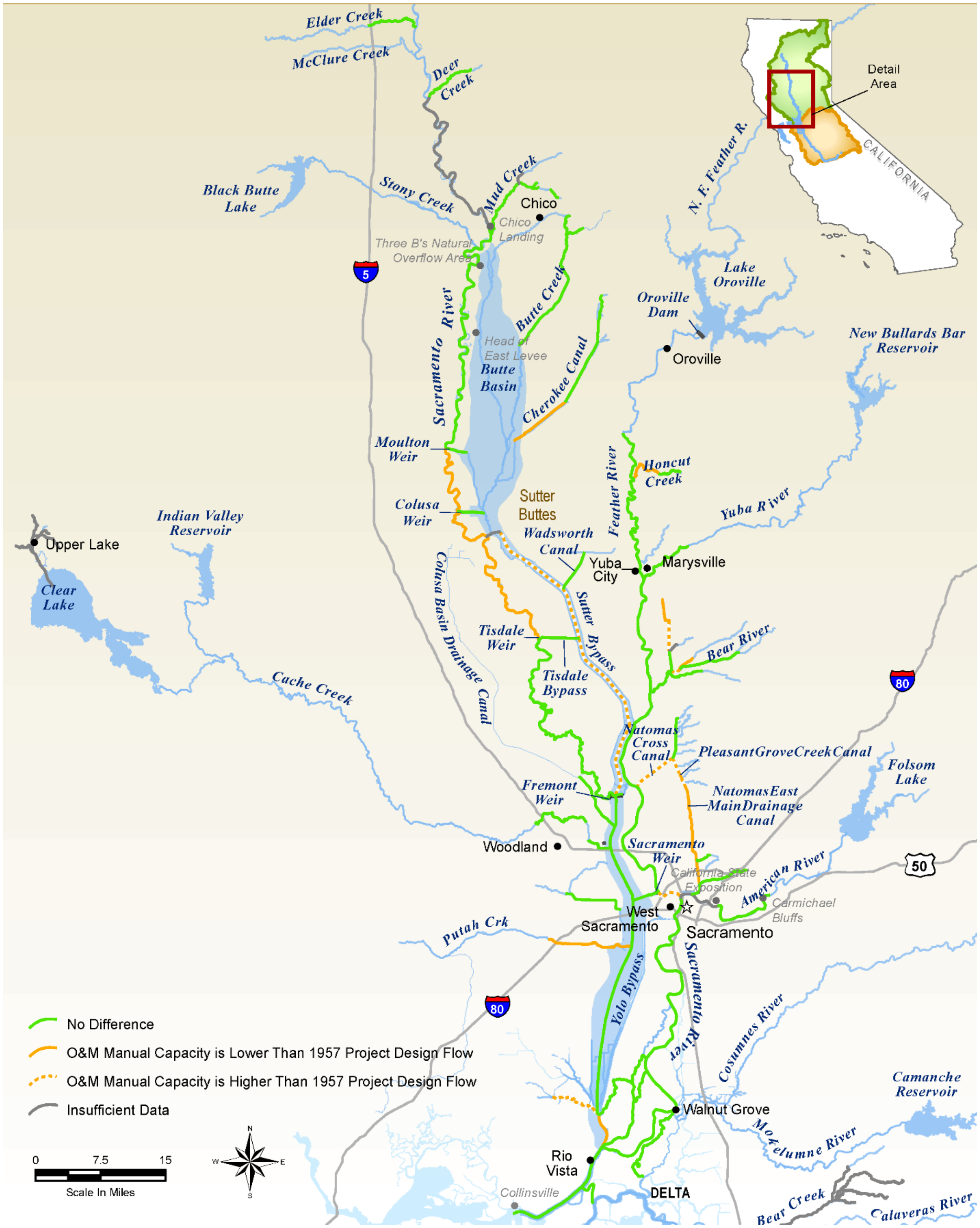
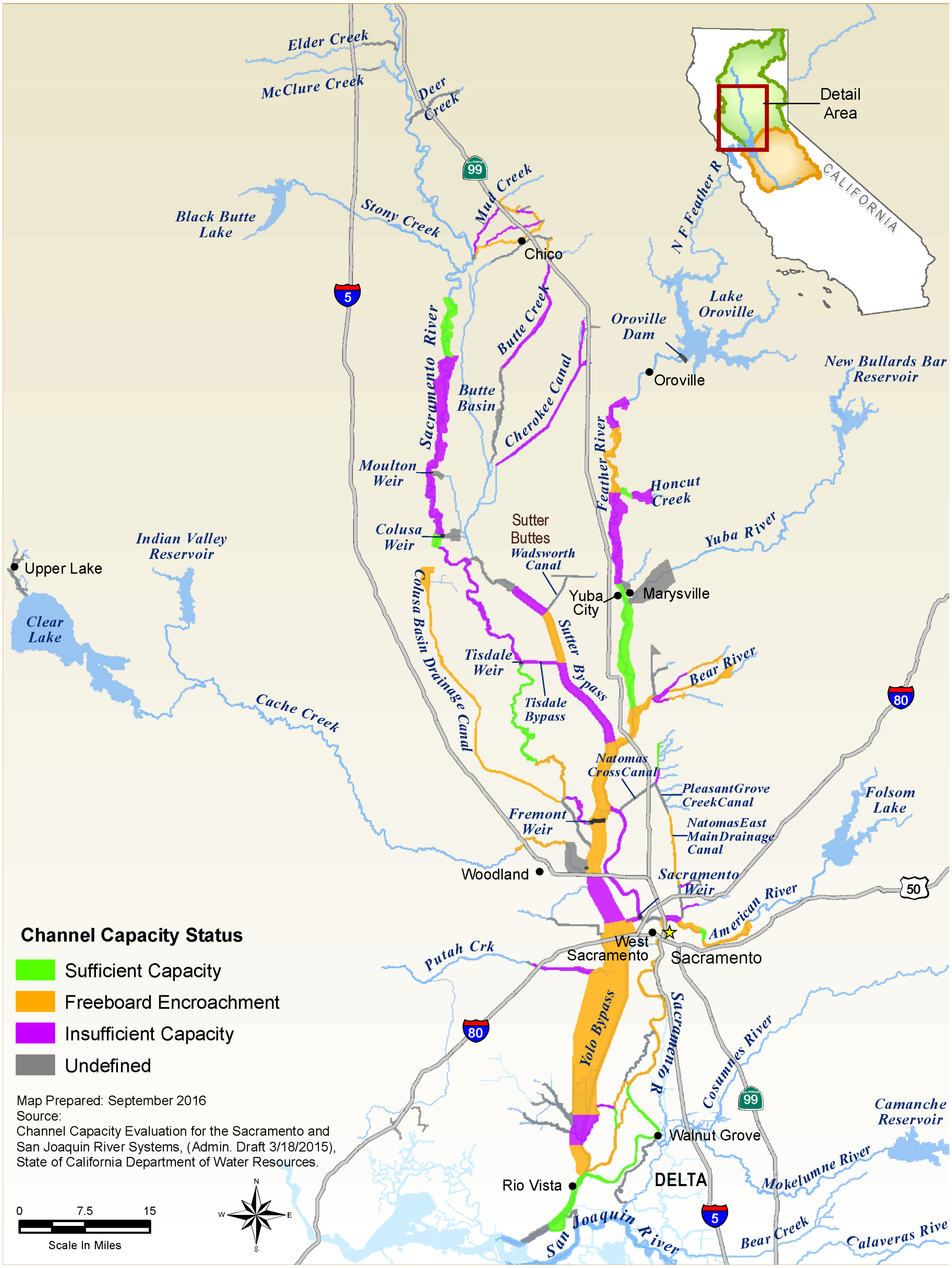


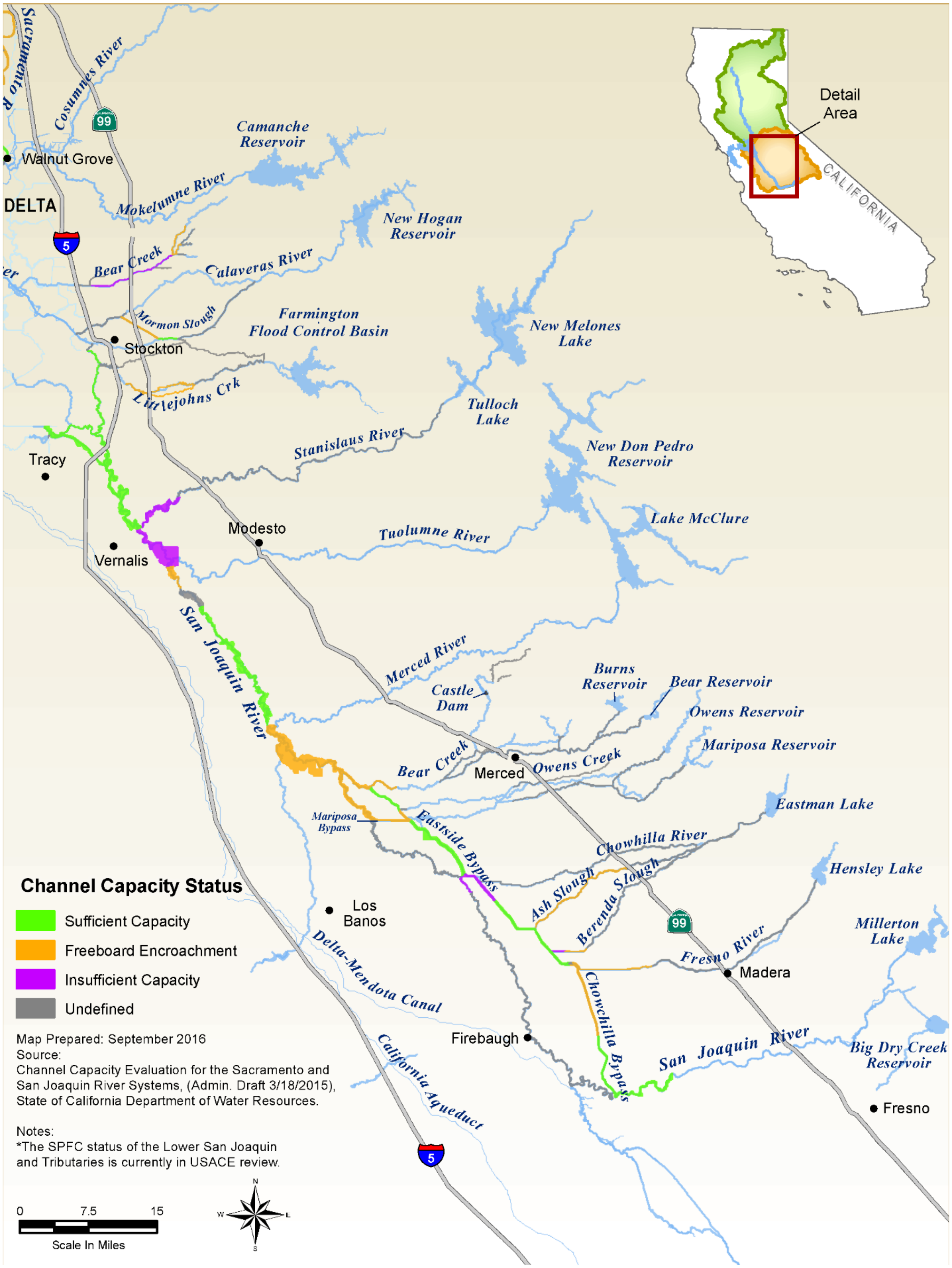
Figure 5-1. Differences Between O&M Manual Design Capacities and Design Profile Flows in the Sacramento River Watershed

Figure 5-2. Differences Between O&M Manual Design Capacities and Design Profile Flows in the San Joaquin River Watershed



Map Prepared: September 2016
Source:
Channel Capacity Evaluation for the Sacramento and San Joaquin River Systems, (Admin. Draft 3/18/2015), State of California Department of Water Resources.

Figure 5-3. Channel Capacity Status in the Sacramento River Watershed



Map Prepared: September 2016

Source:
Channel Capacity Evaluation for the Sacramento and San Joaquin River Systems, (Admin. Draft 3/18/2015), State of California Department of Water Resources.

Notes:
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 5-4. Channel Capacity Status in the San Joaquin River Watershed

5.2 Channel Vegetation

Criteria for vegetation management in the channels have been evolving since SPFC facilities were constructed. Maintenance criteria are contained in standard and unit-specific O&M manuals provided by USACE, Title 23 of the California Code of Regulations, and Title 33 of the Code of Federal Regulations.

State and federal environmental laws have complicated efforts to maintain SPFC channels. These environmental laws include the State and federal Endangered Species Acts; the federal Clean Water Act, the federal Porter-Cologne Act and Migratory Bird Treaty Act; and California Fish and Game Code requirements for Stream Bed Alteration Agreements. Specifically, channel maintenance is increasingly challenging because of compliance requirements for these laws and regulations, and the length of time for obtaining approvals for maintenance.

Table 5-1 lists current standards that apply to vegetation management for channels. (Note that standards that apply to vegetation management for levees are discussed in Section 4.7.)

Table 5-1. Current Standards for Channel Vegetation Management

Source of Standard	General Description of Standard
Title 33, Federal Statutes, Part 208	Provides some flexibility in allowing vegetation in a channel as long as project works function properly and are not impaired by debris, weeds, or wild growth.
Title 23, California Code of Regulations	Vegetation that impedes or misdirects floodflows is not permitted to remain within a floodway or bypass.[1]
General and unit-specific O&M manuals	Generally requires that "the channel or floodway is clear of debris, weeds and wild growth."[2] Limits vegetation in a project flood control channel to nondense brush or trees not more than 2 inches in diameter. Vegetation in channel is allowed if the design water surface profile is maintained.
USACE Sacramento District correspondence[3]	Allowable vegetation in a floodway shall not affect the capability of the project works to convey design flows within specified levels of freeboard, and shall not compromise the integrity or inspectability of the flood control project. In addition, channels shall pass design flows at stage levels at or below the 1957 design profile.[4] Projects containing significant vegetation within a channel will be considered in compliance when the sponsor shows, through hydraulic analysis, that the project is capable of conveying design flows while maintaining the specified levels of freeboard.
Clean Water Act Section 404	Vegetation management activities could require that a Clean Water Act Section 404 permit be obtained from USACE for discharge of dredged or fill material into "waters of the United States, including wetlands." Waters of the United States include traditionally navigable rivers and their tributaries, and adjacent wetlands that have a significant nexus with waters of the United States. If a Section 404 permit is required, a Clean Water Act Section 401 Water Quality Certification would also be required by the Regional Water Quality Control Board.
Federal Endangered Species Act	Vegetation management activities could potentially adversely impact fish and wildlife species and their habitat. Section 7 of the Endangered Species Act outlines procedures for federal interagency cooperation for implementing the Endangered Species Act. Section 7(a)(2) requires that federal agencies consult with USFWS and/or NMFS so that "any action authorized, funded, or carried out by such agency" does not jeopardize the existence of a listed species or adversely modify critical habitat. If there is no federal nexus, a Habitat Conservation Plan or low-threat Habitat Conservation Plan may need to be prepared and complied with.
California Endangered Species Act	Vegetation management activities could potentially adversely impact fish and wildlife species and their habitat. Pursuant to the California Endangered Species Act, a permit from the California Department of Fish and Wildlife (formerly the California Department

Table 5-1. Current Standards for Channel Vegetation Management

Source of Standard	General Description of Standard
	of Fish and Game) is required for projects that could result in the take of a plant or animal species that is State-listed as threatened or endangered, or is a candidate species. In accordance with Sections 2080 and 2081 of the California Fish and Game Code, a Consistency Determination or Incidental Take Permit could be required.
California Fish and Game Code Section 1600, Streambed Alteration Agreement	Because vegetation management activities conducted in channels could potentially change the bed, channel, or bank of a channel, and potentially adversely impact fish and wildlife species and their habitat, a California Fish and Game Code Section 1600 Streambed Alteration Agreement may be needed (California Department of Fish and Wildlife, 2010).
DWR Levee Vegetation Management Strategy, 2012 CVFPP	This criteria allows vegetation beyond 20 feet from the waterside hinge point; requires grass and weeds to be less than 12 inches in height, and trees to be trimmed 5 feet above ground or 12 feet above the crown road, with thinning to allow clear visibility and floodfight access.

Notes:

[1] Title 23, California Code of Regulations, Section 131.

[2] Standard O&M Manual for the Sacramento River Flood Control Project, revised May 1955, USACE Sacramento District. (USACE, 1955a).

[3] USACE correspondence dated August 14, 2006, regarding The Reclamation Board's request for clarification of the State's O&M responsibilities associated with federal projects for which The Reclamation Board provided assurances of cooperation.

[4] USACE *Levee and Channel Profiles, File Number 50-10-334.*

rnia Code of Regulations

Key:

CVFPP = Central Valley Flood Protection Plan
DWR = California Department of Water Resources
O&M = operations and maintenance
USFWS = United States Fish and Wildlife Service
DFG = California Department of Fish and Game
NMFS = National Marine Fisheries Service
USACE = United States Army Corps of Engineers

5.2.1 Status Evaluation Methodology

Channel vegetation conditions are evaluated by the degree to which vegetation impedes flood flows. Vegetation management conditions were evaluated against DWR's current maintenance standards using results from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b). A total of 26 SPFC Channels are inspected annually. Table 5-2 contains rating descriptions for channel vegetation. Each channel inspection location includes a separate upstream and downstream channel inspection rating. In this 2017 FSSR, only the worst of the two ratings is reported for each location.

Table 5-2. Channel Inspection Rating Descriptions for Channel Vegetation

Inspection Rating	Rating Description
Acceptable (A)	Log jams, snags, vegetation growth (such as cattails, bulrushes, bushes or saplings) or other obstructions block approximately 25 percent of the capacity.
Minimally Acceptable (M)	Log jams, snags, vegetation growth (such as cattails, bulrushes, bushes or saplings) or other obstructions block approximately 50 percent of the capacity.
Unacceptable (U)	Log jams, snags, vegetation growth (such as cattails, bulrushes, bushes or saplings) or other obstructions block approximately 25 percent of the capacity.

5.2.2 Limitations of Status Results

Information on channel vegetation management conditions is limited to the channels that DWR inspects (26 channels and 233 total miles) and to conditions that are visible. Channel vegetation inspections are usually performed from selected points along a channel and from the crown of a levee. Impacts of vegetation on channel conveyance can be evaluated more thoroughly using past performance evaluation, vegetation surveying, and project-specific hydraulic modeling.

To comply with USACE guidance, DWR must demonstrate that vegetation in a channel does not impact channel conveyance capacity and does not encroach on the levee's freeboard. Clarification is often needed about the specified levels of freeboard used to determine the extent of allowable vegetation throughout a channel. Inconsistencies about the required level of freeboard are common among SPFC channels; the freeboard cited in O&M manuals often conflicts with the freeboard specified in as-constructed plans. Determining the required levels of freeboard is therefore critical in assessing conveyance capacity, and whether vegetation or other factors are impeding proper functioning of SPFC facilities.

5.2.3 Results of Status Evaluations

Channel inspection ratings for vegetation from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b) are shown in Figures 5-5 and 5-6 for channels maintained by DWR and other maintaining agencies. Of the 233 miles of SPFC channels (containing 157 checkpoints) inspected by DWR, 13 checkpoints were rated Unacceptable and 56 locations were rated Minimally Acceptable for channel vegetation. Additional vegetation problems may be present in channels not inspected by DWR.

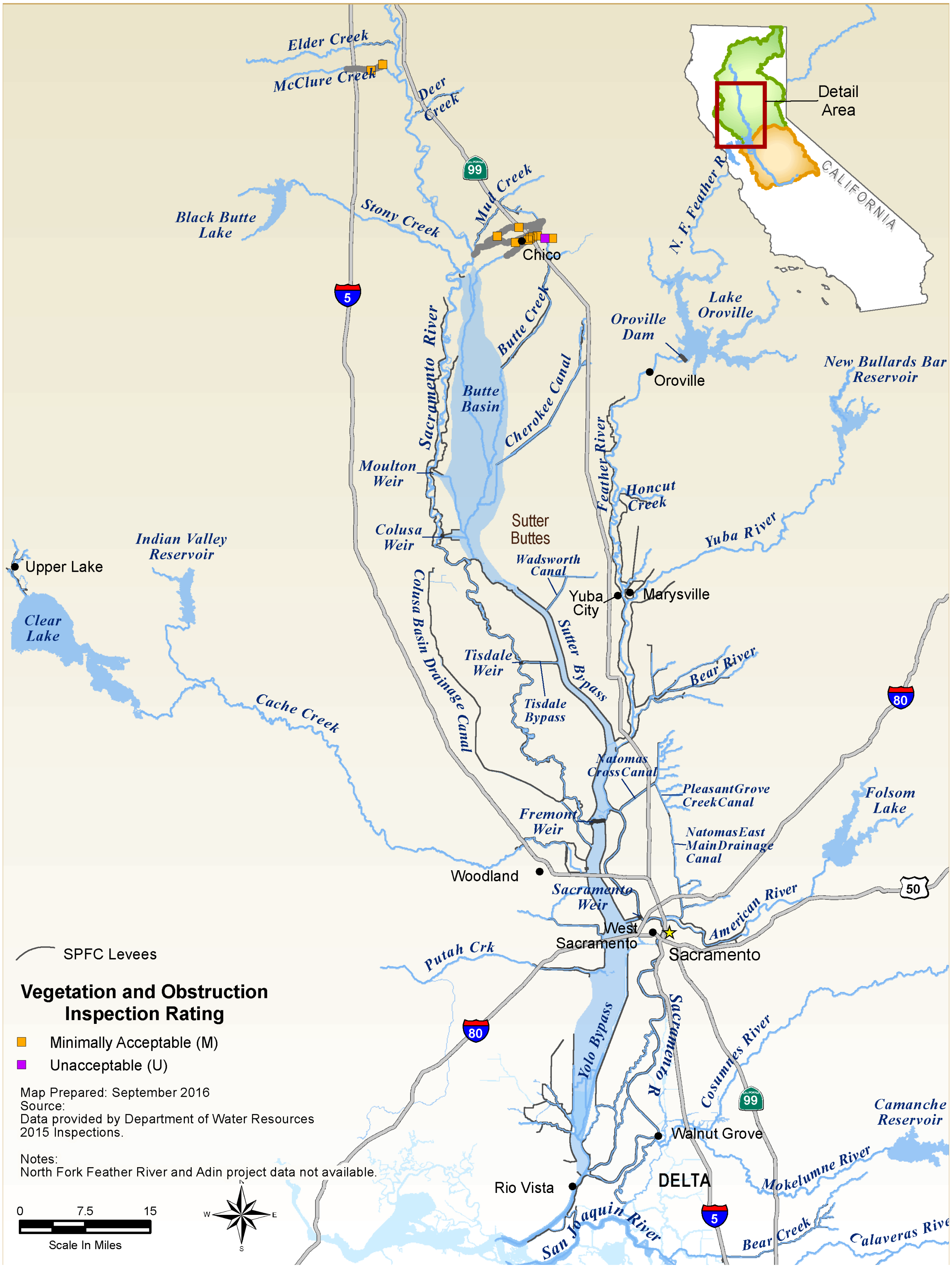
Areas that are undergoing active vegetation management, or in which vegetation management has been initiated or required in the Sacramento River watershed are shown in Figure B-5 in Appendix B, Section B-2. Similar data were unavailable for the San Joaquin River watershed.

For additional information on recent remedial actions/improvements, ongoing and planned remedial actions/improvements, and ongoing actions to improve future evaluations of vegetation management in channels, see Appendix B, Section B-2.

5.3 Channel Sedimentation

Since SPFC facilities were constructed, maintenance standards have been consistent in requiring actions to address shoaling or sedimentation that reduces channel conveyance capacity or deflects flows within a channel. Channel sedimentation can occur in areas of significant flow expansion (i.e., bypass inlets), in backwater near confluences, or in some tidally influenced reaches. In addition to reducing channel conveyance capacity, channel sedimentation of natural channels can cause lateral redirection of flows, leading to bank erosion. (In cases where design channel capacity is not impaired, such flow redirection problems caused by sedimentation can be addressed by sediment redistribution within the channel, instead of more expensive sediment removal and disposal.)

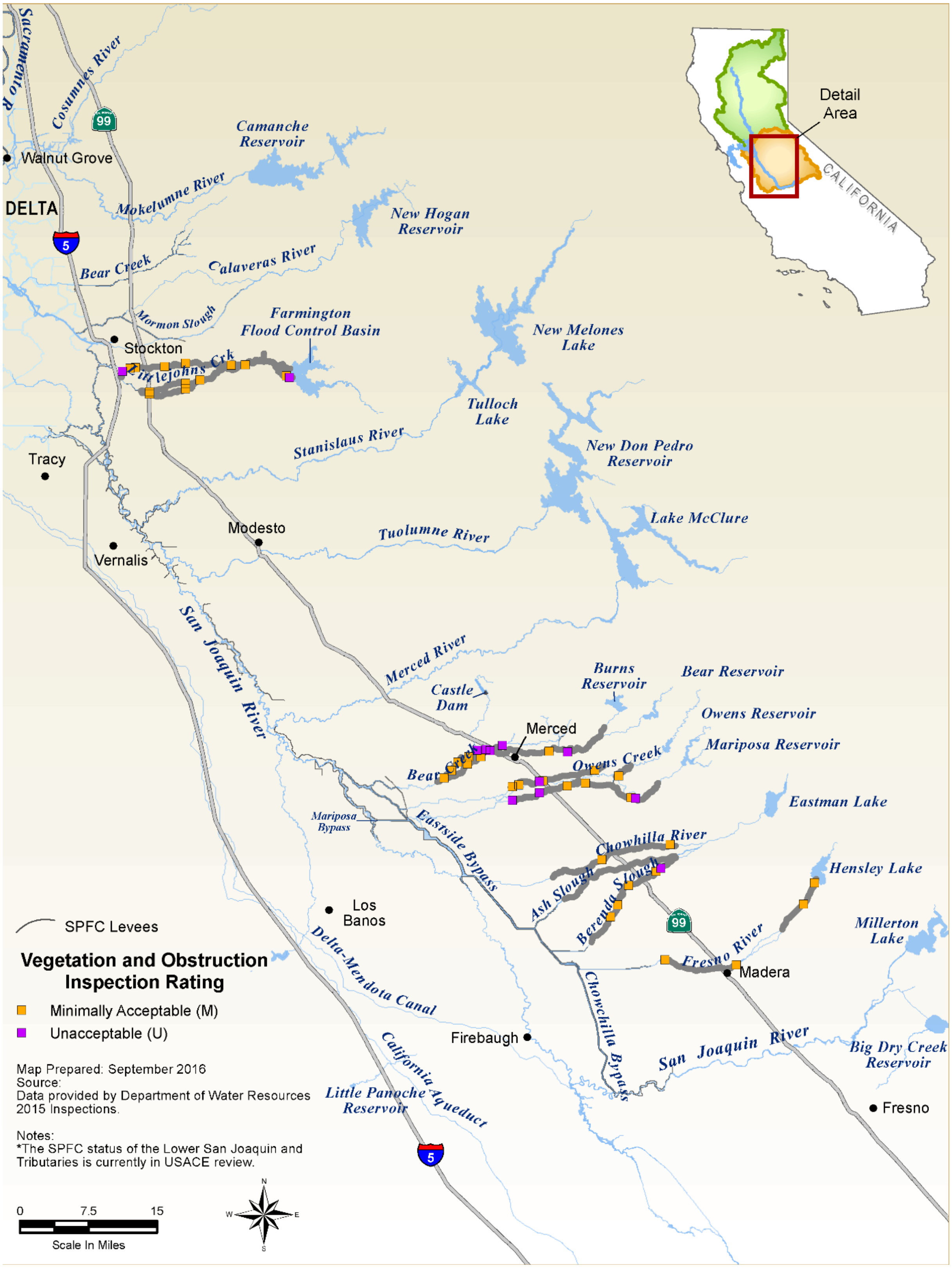
Sedimentation can also induce vegetation encroachment when low-flow conditions prevent the natural removal of vegetation on bars that are formed along a channel. Several areas with known sedimentation problems, such as the Cherokee Canal and Yuba River, are associated with hydraulic mining debris from the nineteenth century. Sedimentation also often results from eroding riverbanks and levees and agricultural runoff. Table 5-3 lists current standards that apply to sediment management for channels.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
North Fork Feather River and Adin project data not available.

Figure 5-5. 2015 Channel Vegetation Inspection Ratings in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 5-6. 2015 Channel Vegetation Inspection Ratings in the San Joaquin River Watershed

Table 5-3. Current Standards for Channel Sediment Management

Source of Standard	Description of Standard
Title 33, Federal Statutes, part 208	Sediment management is to be performed in channels so that flood conveyance capacity is maintained.
Federal Clean Water Act Section 404	Channel sedimentation management activities could require a Clean Water Act Section 404 permit to be obtained from USACE for discharge of dredged or fill material into “waters of the United States, including wetlands.” Waters of the United States include traditionally navigable rivers and their tributaries and adjacent wetlands that have a significant nexus with waters of the United States. If a Section 404 permit is required, a Clean Water Act Section 401 Water Quality Certification would also be required by the Regional Water Quality Control Board.
Federal Rivers and Harbors Act	The River and Harbors Act of 1899 addresses activities that involve the construction of, among other structures, dams, bridges, and dikes across any navigable water. The act also addresses placement of obstructions to navigation outside established federal lines, as well as the excavation or deposition of material in such waters. All of these actions require permits from USACE.
Unit-specific O&M manuals	Generally, limit sedimentation in a project flood protection system so that “the capacity of the channel or floodway is not being reduced by the formation of shoals.”
ETL 1110-2-571	Provides some flexibility to sediment management if the water surface profile is maintained. The operative rule is that “capacity of the channel or floodway is not being restricted by the formation of shoals” (USACE, 2009b).
Standard O&M Manual for the Sacramento River Flood Control Project	States that “the capacity of the channel or floodway is not being reduced by the formation of shoals” and “sediment, rubbish, industrial waste or any debris plugs or other obstructions should be removed from the channel to prevent any tendency for the flows to be deflected within the channel” (USACE, 1955a)

Key:
O&M = operations and maintenance
USACE = United States Army Corps of Engineers

5.3.1 Status Evaluation Methodology

Sediment management conditions were evaluated against DWR’s current maintenance standards using results from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b). Table 5-4 shows DWR inspection rating descriptions for shoaling and sedimentation in SPFC channels. Each channel inspection location includes a separate upstream and downstream channel inspection rating. In this 2017 FSSR, only the worst of the two ratings is reported for each location.

Table 5-4. Channel Inspection Rating Descriptions for Shoaling and Sedimentation

Inspection Rating	Rating Description
Acceptable (A)	No shoaling or sedimentation present.
Minimally Acceptable (M)	Nonaquatic grasses present on shoal. No trees or brush are present on shoal, and channel flow is not impeded.
Unacceptable (U)	Shoaling is well established, and stabilized by trees, brush, or other vegetation. Shoals are diverting flow to channel bank causing bank erosion and undercutting.

5.3.2 Limitations of Status Evaluations

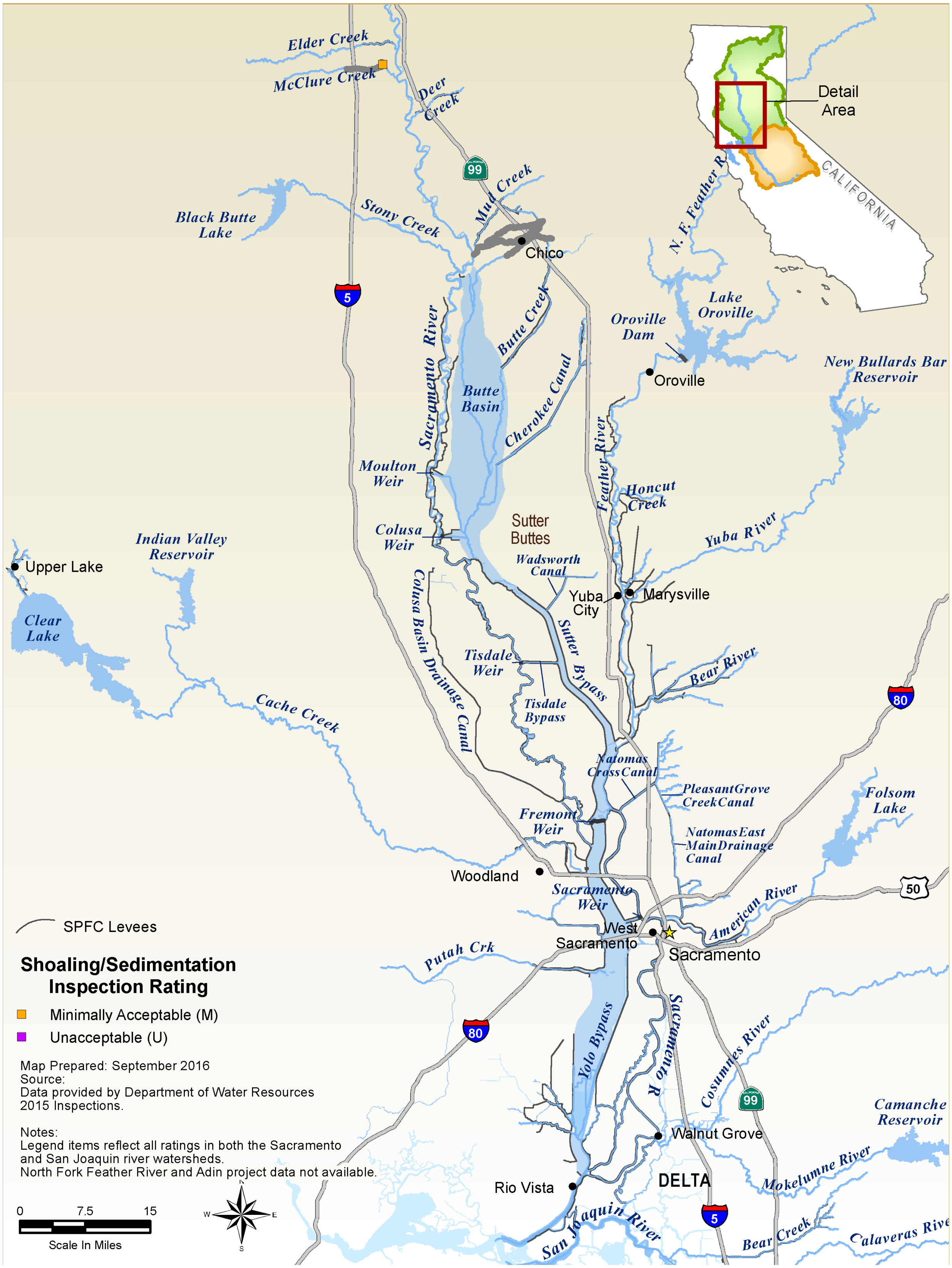
Information about channel sedimentation conditions is limited to the channels that DWR inspects (i.e., 26 channels and 233 miles) and to conditions that are visible. Shoaling and sedimentation inspections are usually performed from selected points along a channel and from the crown of a levee. Sedimentation conditions can be evaluated more thoroughly using observation, past performance evaluation, channel surveying, and project-specific hydraulic modeling. Using these methods, a channel is determined to be inadequate if the channel capacity is less than the design capacity. Data about lowering of channel beds, bank instability, and channel widening were not available.

5.3.3 Results of Status Evaluations

Shoaling and sedimentation channel inspection ratings from the shoaling and sedimentation channel inspection ratings from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b) are shown in Figures 5-7 and 5-8. Of the 233 miles of SPFC channels inspected by DWR, eight locations were rated unacceptable and 26 locations were rated minimally acceptable for shoaling and sedimentation. Additional channel sedimentation problems may exist in areas not inspected by DWR.

Figure B-6 in Appendix B, Section B-3, shows the current status of sediment management projects in channels that DWR is responsible for maintaining in the Sacramento River watershed. Graphs embedded in Figure B-6 show annual cubic yards of sediment removed by DWR from 1983 through 2009. Data for sediment management activities in the San Joaquin River watershed are currently not available.

For additional information about recent remedial actions/improvements, ongoing and planned remedial actions/improvements, and ongoing actions to improve future evaluations of sedimentation in SPFC channels, see Appendix B, Section B-3.



SPFC Levees

Shoaling/Sedimentation Inspection Rating

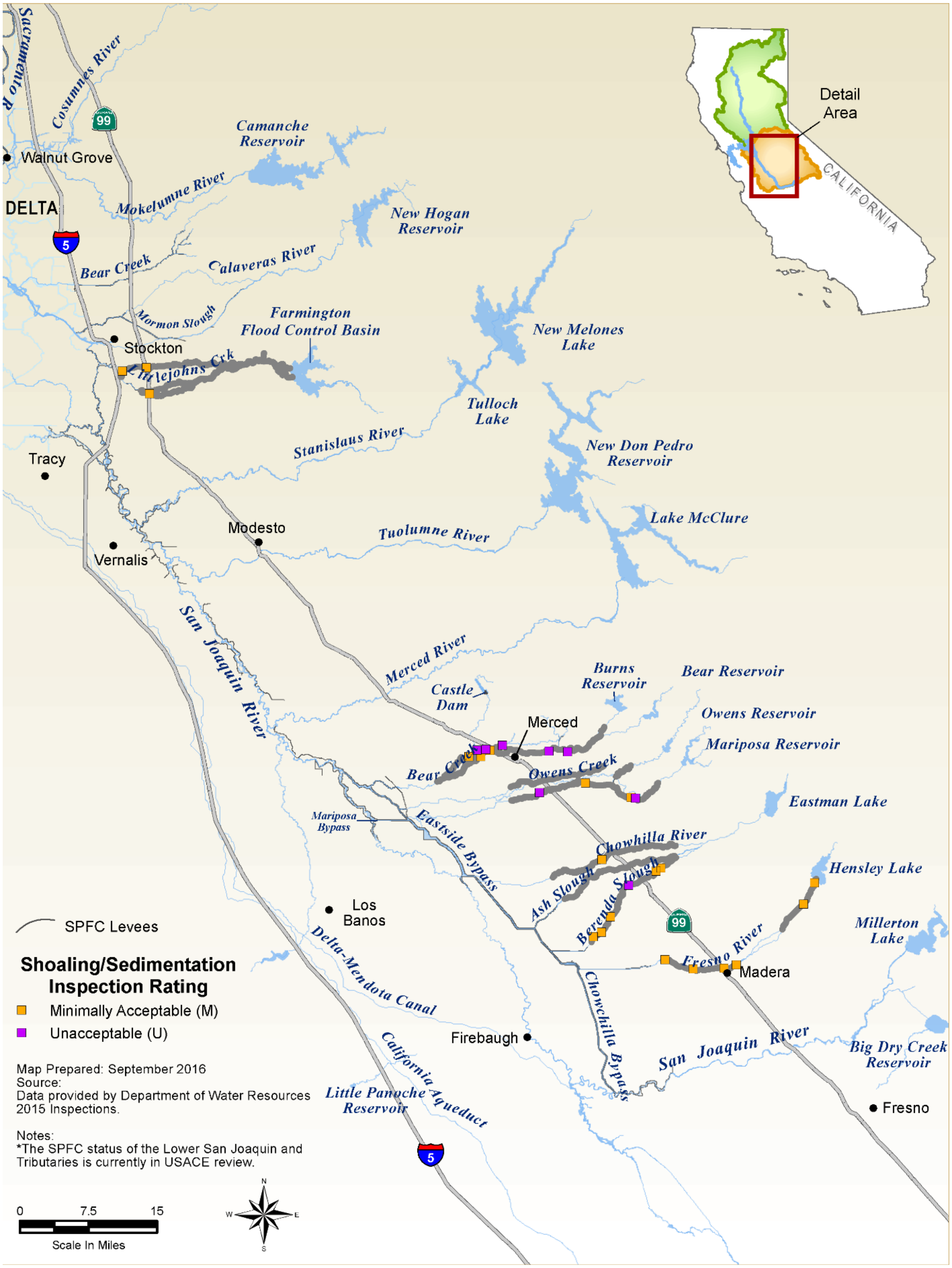
🟧 Minimally Acceptable (M)

🟪 Unacceptable (U)

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.
North Fork Feather River and Adin project data not available.

Figure 5-7. 2015 Channel Shoaling/Sedimentation Inspection Ratings in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 5-8. 2015 Channel Shoaling/Sedimentation Inspection Ratings in the San Joaquin River Watershed

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6.0 Flood Control Structure Status

The SPFC depends on many flood control structures built along tributaries and bypasses to redirect, restrict, or attenuate floodflows to protect lives and property, including hydraulic structures, pumping plants, and bridges. Although major flood control structures in the Sacramento and San Joaquin river watersheds are part of the SPFC, the flood management system also relies on many non-SPFC hydraulic structures, pumping plants, and bridges to convey floodwaters. Flow in the Sacramento River is reduced by floodwater spilled into bypass areas through five SPFC weirs (i.e., the Moulton, Colusa, Tisdale, Fremont, and Sacramento weirs). Because of these spills to the bypass areas, the design flow capacity of the Sacramento River generally decreases in a downstream direction except where tributary inflow increases river flow. In the upper San Joaquin River, SPFC hydraulic structures help direct flows into the Chowchilla, Eastside, and Mariposa bypasses.

Some flood control structures are multiuse and are operated during both the flood and nonflood seasons under differing parameters. A few of the structures are mainly used to manage flows during nonflood season. These flood control structures include fixed crown diversion weirs, controllable diversion structures, outfall structures, drop structures, and interior drainage pumping plants. Flood control structures also include the M&T and Goose Lake flood relief structures and bridges that are maintained by DWR to convey floodwaters in accordance with California Water Code Section 8361.

Many flood control structures in the SPFC were designed and constructed before current design criteria were adopted, and have not been upgraded to meet current inspection criteria. These structures were generally built between 1940 and 1970, with several structures constructed even earlier. A few structures were modified or improved in the intervening years, but many of the structures are near or have exceeded the end of their expected service lives. Some flood control structures are visibly aging and have significant age-related damage and other problems, in addition to being functionally obsolete (meaning that they have inadequate controls, lack redundant backup power supply, or have restricted access for maintenance).

DWR's maintenance activities for SPFC flood control structures were the subject of an annual report in 1959, entitled Location, Description and Inventory of Miscellaneous Project Structures, Sacramento River Flood Control Project, and American River Flood Control Project*.* This report was followed shortly by a maintenance status report. DWR has since provided annual maintenance status reports on flood control structures to the Board.

DWR inspects federal project structures in both the Sacramento and San Joaquin watersheds. Several of these project structures are not part of the SPFC because documentation of State assurances of nonfederal cooperation has not been found, but these structures are included in this section to provide status information.

Physical conditions of project flood control structures inspected by DWR in 2015 are summarized below, according to the following categories:

- Hydraulic structures
- Pumping plants
- Bridges

6.1 Hydraulic Structures

SPFC hydraulic structures include weirs, drop structures, control structures, drainage structures, and outfall structures. DWR has historically conducted visual inspections and documented conditions of SPFC hydraulic structures (but not to evaluate their structural integrity). DWR inspection criteria have evolved as USACE has updated design guidance.

The current DWR has inspection program to evaluate overall conditions of the hydraulic structures it maintains. Because the hydraulic structures maintained by DWR are the oldest in the system and are near or have exceeded their expected service lives, DWR is now evaluating these structures to determine their future serviceability. Furthermore, DWR is working with USACE and maintaining agencies to evaluate other hydraulic structures and, if necessary, reconstruct them with USACE to meet federal standards.

6.1.1 Status Evaluation Methodology

Annual inspections for hydraulic structures form the basis for this evaluation, as presented in the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b). In addition, 2015 inspection results from the DWR Hydraulic Structures Inspection Program were incorporated into the evaluation, as appropriate (see Section 2.1 for details on the two inspection programs). A total of 49 SPFC hydraulic structures and three non-SPFC hydraulic structures were inspected. The hydraulic structure inspections rated conditions as Acceptable (A), Minimally Acceptable (M), or Unacceptable (U) based on the following categories: structural condition, vegetation and obstructions, encroachments, and erosion/bank caving and shoaling/sedimentation.

These categories are based on the USACE Flood Damage Reduction Segment/System Inspection Report (USACE, 2009a).

Hydraulic structure inspection ratings for structural conditions include a variety of inspection categories, including:

- Closure structures
- Concrete surfaces
- Concrete tilting/settlement
- Concrete foundations
- Culverts: inlets/outlets
- Culverts: breaks/holes/cracks
- Electric gate operators

- Flap gates
- Manual gate operators
- Metal pipes
- Monolith joints
- Other metallic items
- Revetments
- Sluice/slide gates
- Trash racks

Detailed hydraulic structure inspection rating descriptions for structural conditions can be found in the DWR 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (USACE, 2015b). Tables 6-1 through 6-3 show DWR inspection rating descriptions of hydraulic structures for vegetation and obstructions conditions, encroachment conditions, and erosion/bank caving and shoaling/sedimentation conditions, respectively. Though results are presented, rating descriptions for the structural inspection criteria are too extensive to list here.

Table 6-1. Hydraulic Structure Inspection Rating Descriptions for Vegetation and Obstruction Conditions

Inspection Category	Inspection Rating	Rating Description
Vegetation and Obstructions	Acceptable (A)	Minimal, scattered obstructions or vegetation. The flow is not impeded.
	Minimally Acceptable (M)	Log jams, snags, vegetation growth (such as cattails, bulrushes, bushes, or saplings), or other obstructions block approximately 25 percent of the flood control work.
	Unacceptable (U)	Log jams, snags, vegetation growth (such as cattails, bulrushes, bushes, or saplings), or other obstructions block approximately 50 percent of the flood control work.

Table 6-2. Hydraulic Structure Inspection Rating Descriptions for Encroachment Conditions

Inspection Category	Inspection Rating	Rating Description
Encroachments	Acceptable (A)	No trash, debris, excavation, structures, or other obstructions present within the project easement area. Encroachments that do not diminish proper functioning of the project have been previously approved by the Board.
	Minimally Acceptable (M)	Trash, debris, excavations, structures, other obstructions present, or inappropriate activities that will not inhibit project operations were observed and maintenance or emergency operations. Encroachments have been approved by the Board.
	Unacceptable (U)	Trash, debris, excavations, structures, other obstructions present, or inappropriate activities that will inhibit project operations and maintenance or emergency operations were observed.

Table 6-3. Hydraulic Structure Inspection Rating Descriptions for Erosion/Bank Caving and Shoaling/Sedimentation Conditions

Inspection Category	Inspection Rating	Rating Description
Erosion/Bank Caving	Acceptable (A)	No active erosion or bank caving observed on the landward or on the waterside of the levee/channel.
	Minimally Acceptable (M)	There are areas where active erosion is occurring or has occurred on or near the levee/bank, but project integrity is not threatened.
	Unacceptable (U)	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the project. The erosion or caving has compromised project integrity.
Shoaling/ Sedimentation	Acceptable (A)	No shoaling or sedimentation present.
	Minimally Acceptable (M)	Nonaquatic grasses present on shoal. No trees or brush are present on shoal, and structure operation and channel flows are not impeded.
	Unacceptable (U)	Shoaling is well established, and is stabilized by trees, brush, or other vegetation. Shoals are obstructing structure operation or diverting flow to channel bank, causing bank erosion and undercutting.

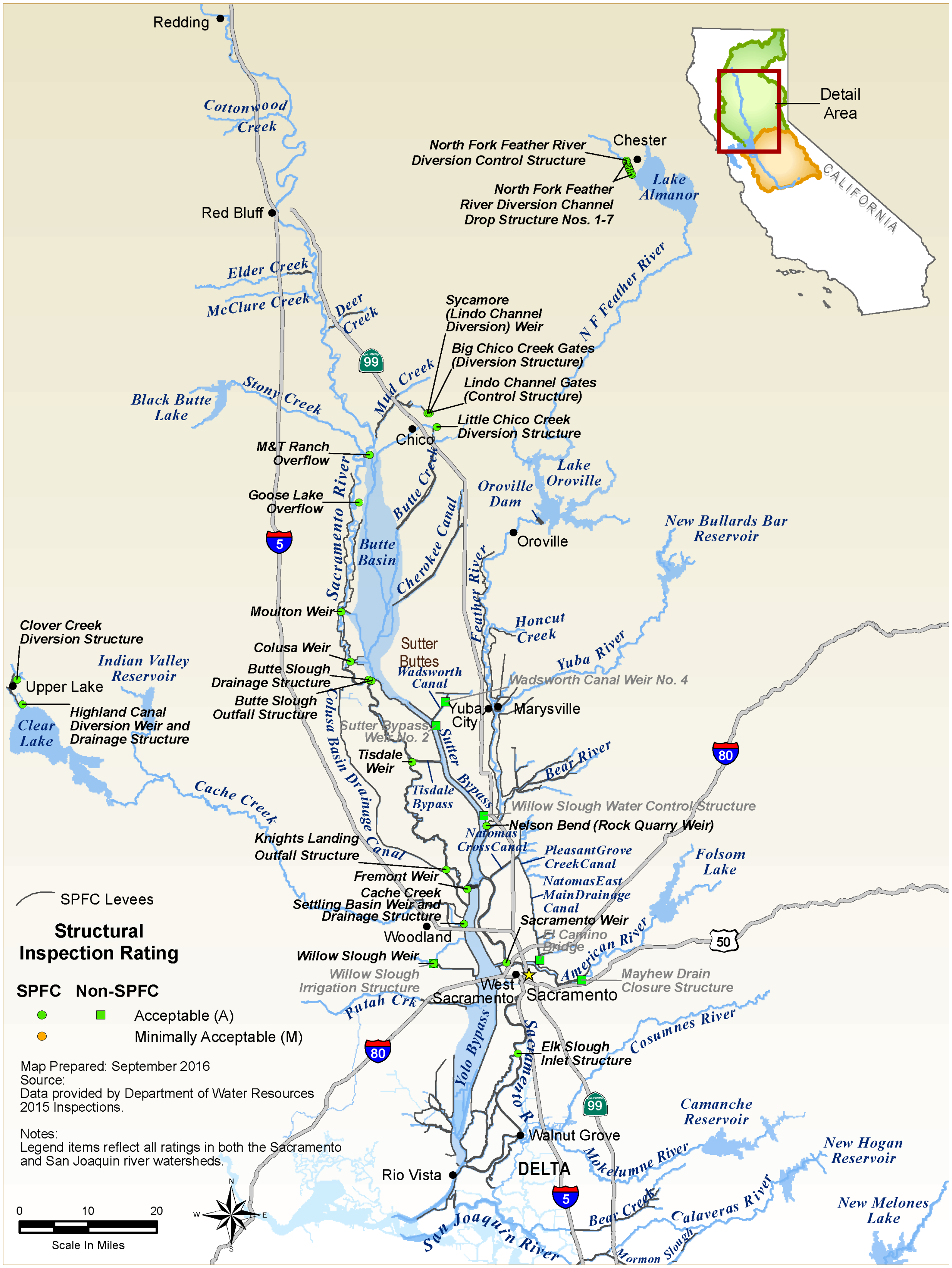
6.1.2 Limitations of Status Evaluations

This evaluation covers only hydraulic structures inspected by DWR, and is limited to conditions that can be visually inspected, annually, during the summer. Most hydraulic structures inspected by DWR are part of the SPFC, but there are a few non-SPFC structures inspected as part of federal projects. Status information for other hydraulic structures in the flood management system is not included because it was not available.

6.1.3 Results of Status Evaluations

Hydraulic structure conditions observed during annual inspections in 2015 (DWR, 20115) are presented in Figures 6-1 through 6-8 for the Sacramento and San Joaquin river watersheds. Tabular results summarizing the Minimally Acceptable and Unacceptable inspection ratings for SPFC and non-SPFC hydraulic structures are shown in Table 6-4.

Ongoing and planned remedial actions and ongoing actions to improve future evaluations are summarized in Appendix C, Section C-1.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.

Figure 6-1. Hydraulic Structures – Structural Conditions in the Sacramento River Watershed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 6-2. Hydraulic Structures – Structural Conditions in the San Joaquin River Watershed

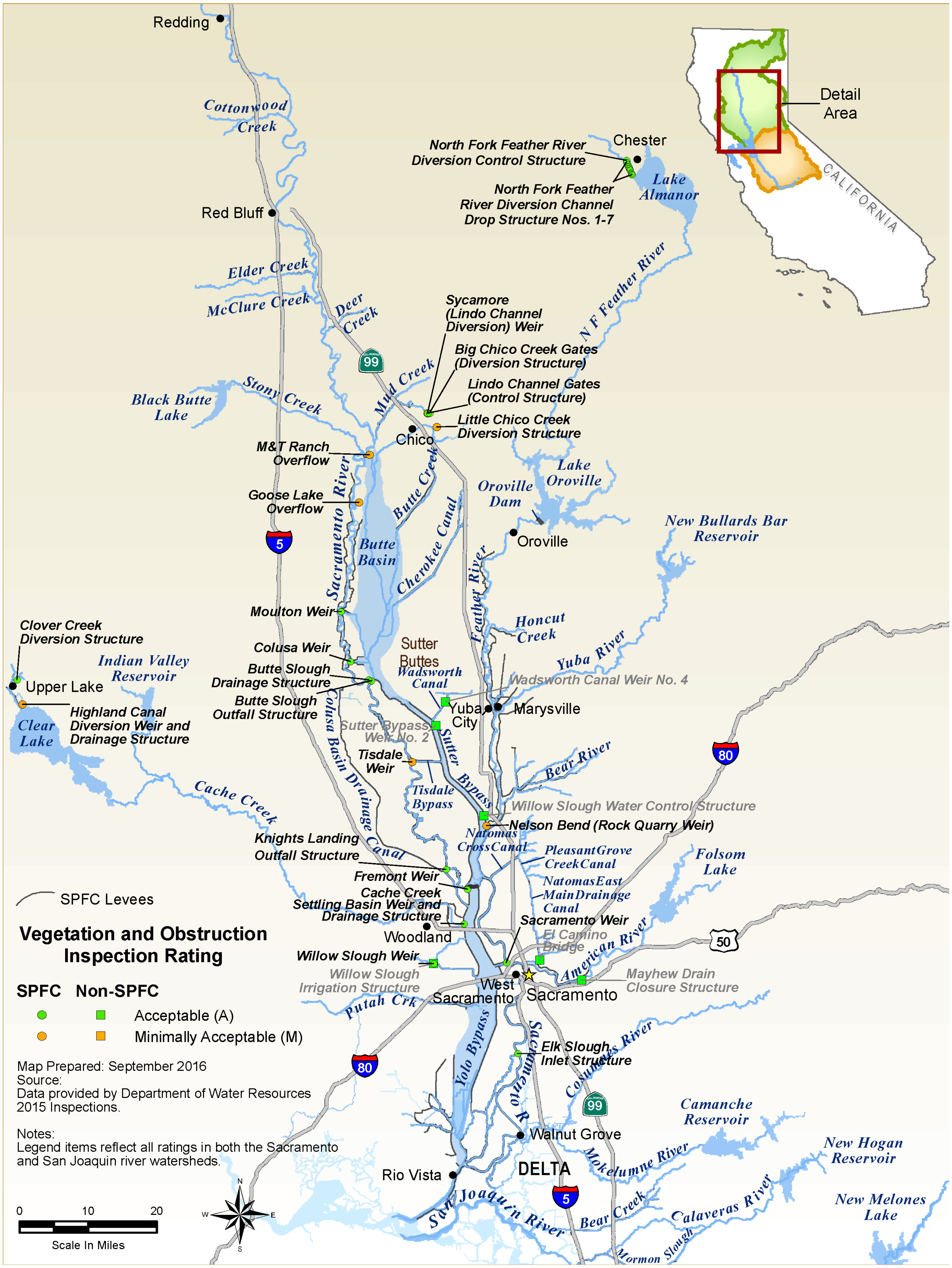
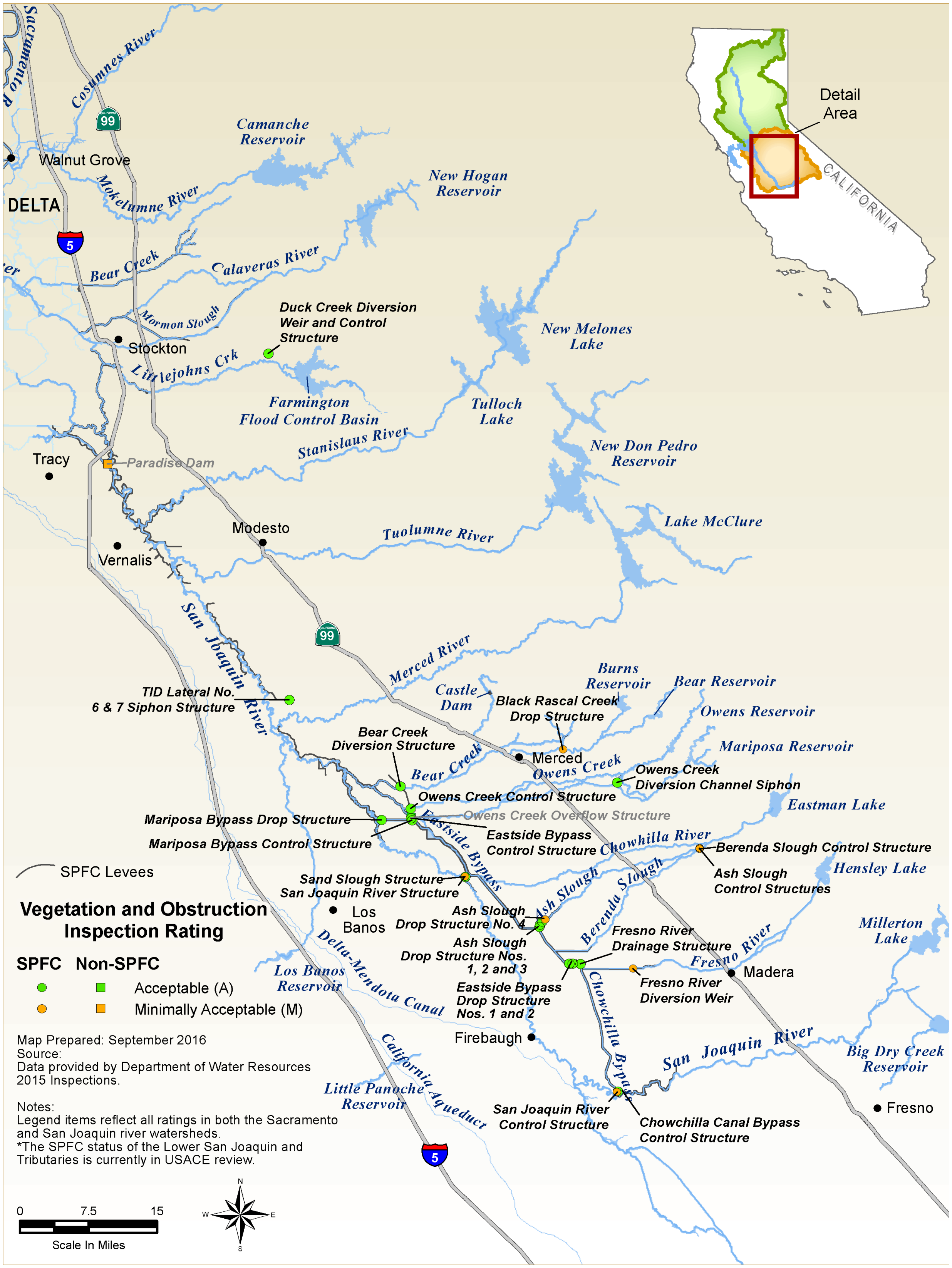


Figure 6-3. Hydraulic Structures – Vegetation and Obstruction Conditions in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 6-4. Hydraulic Structures – Vegetation and Obstruction Conditions in the San Joaquin River Watershed

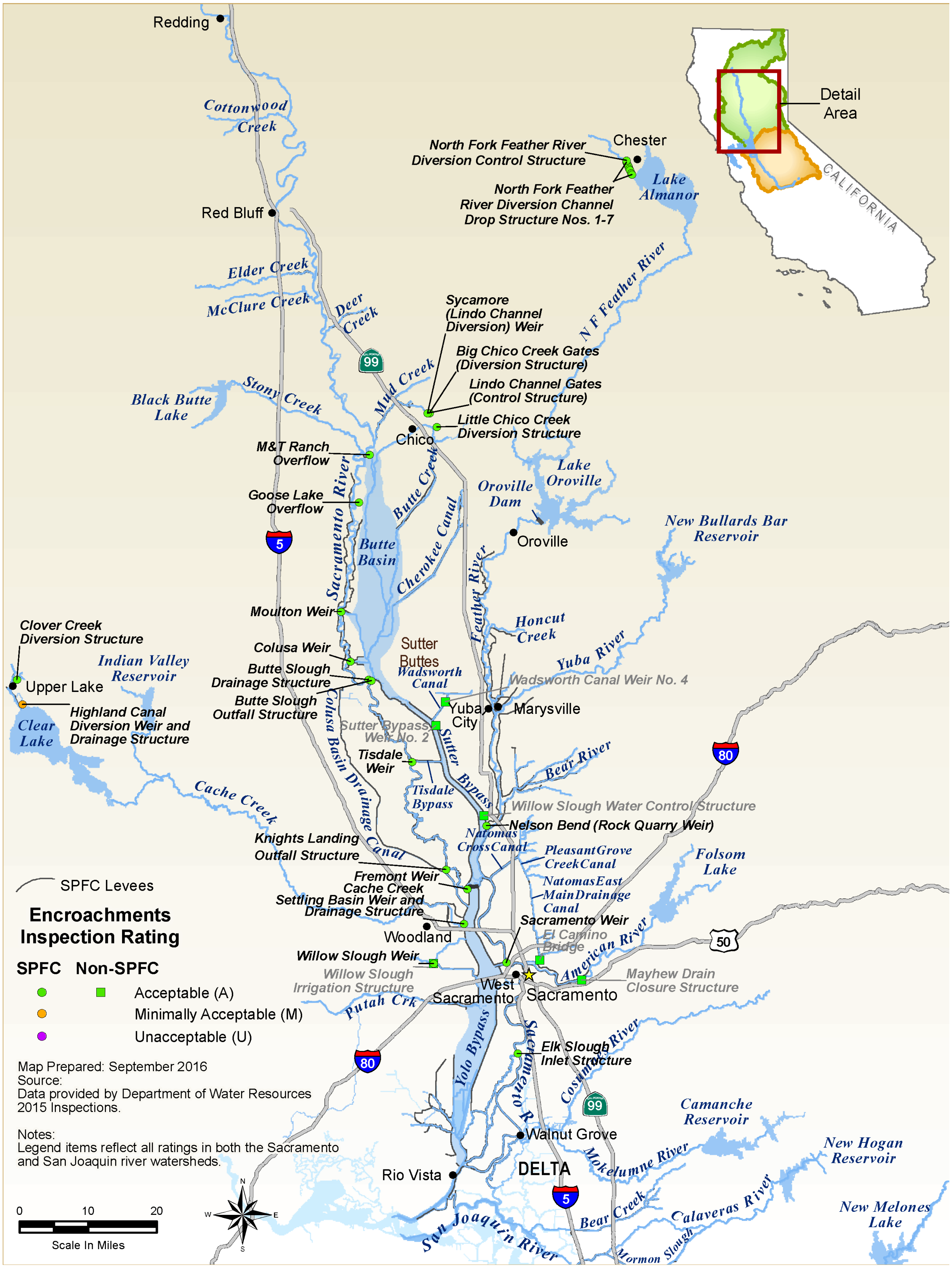
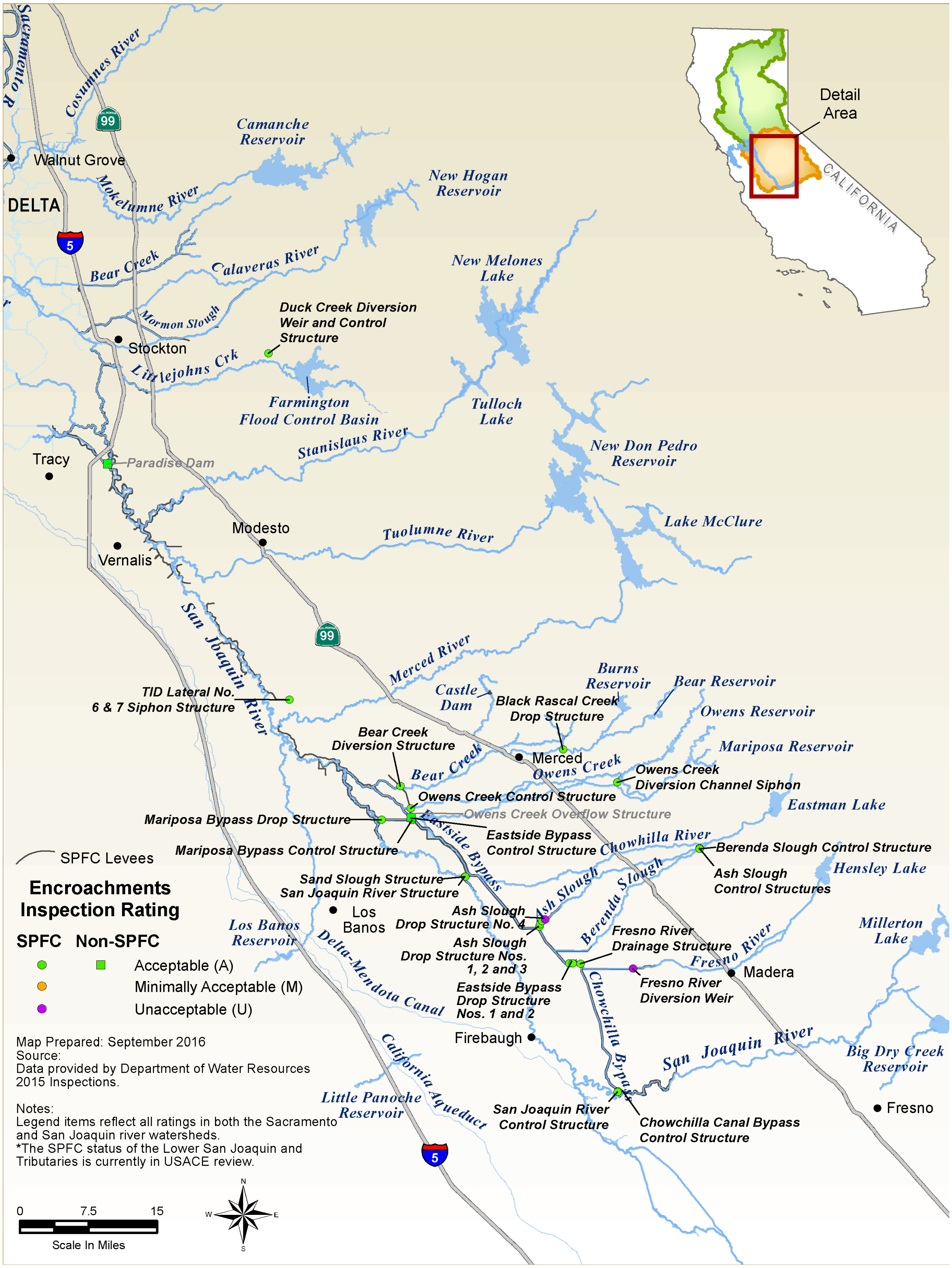


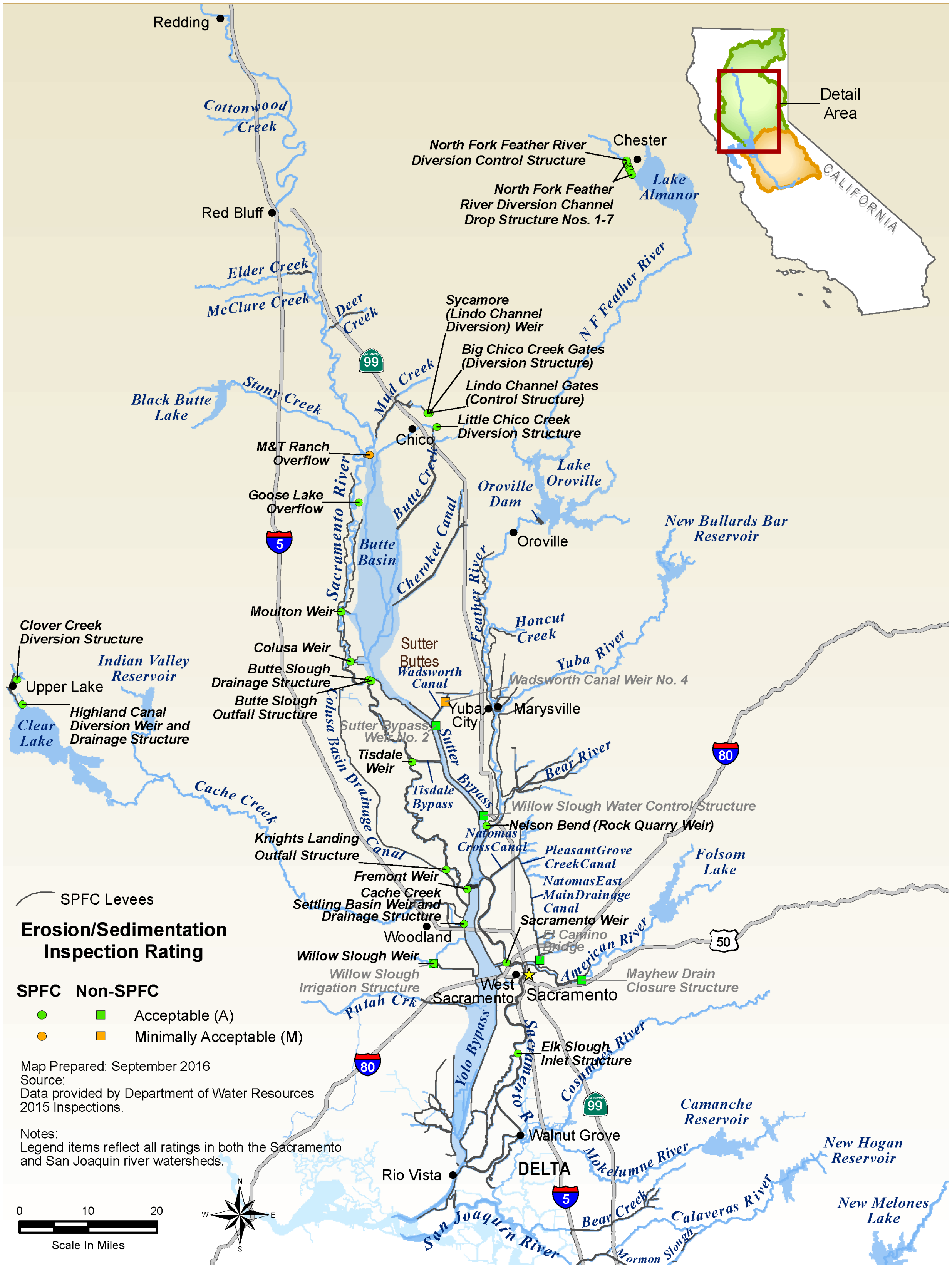
Figure 6-5. Hydraulic Structures – Encroachment Conditions in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

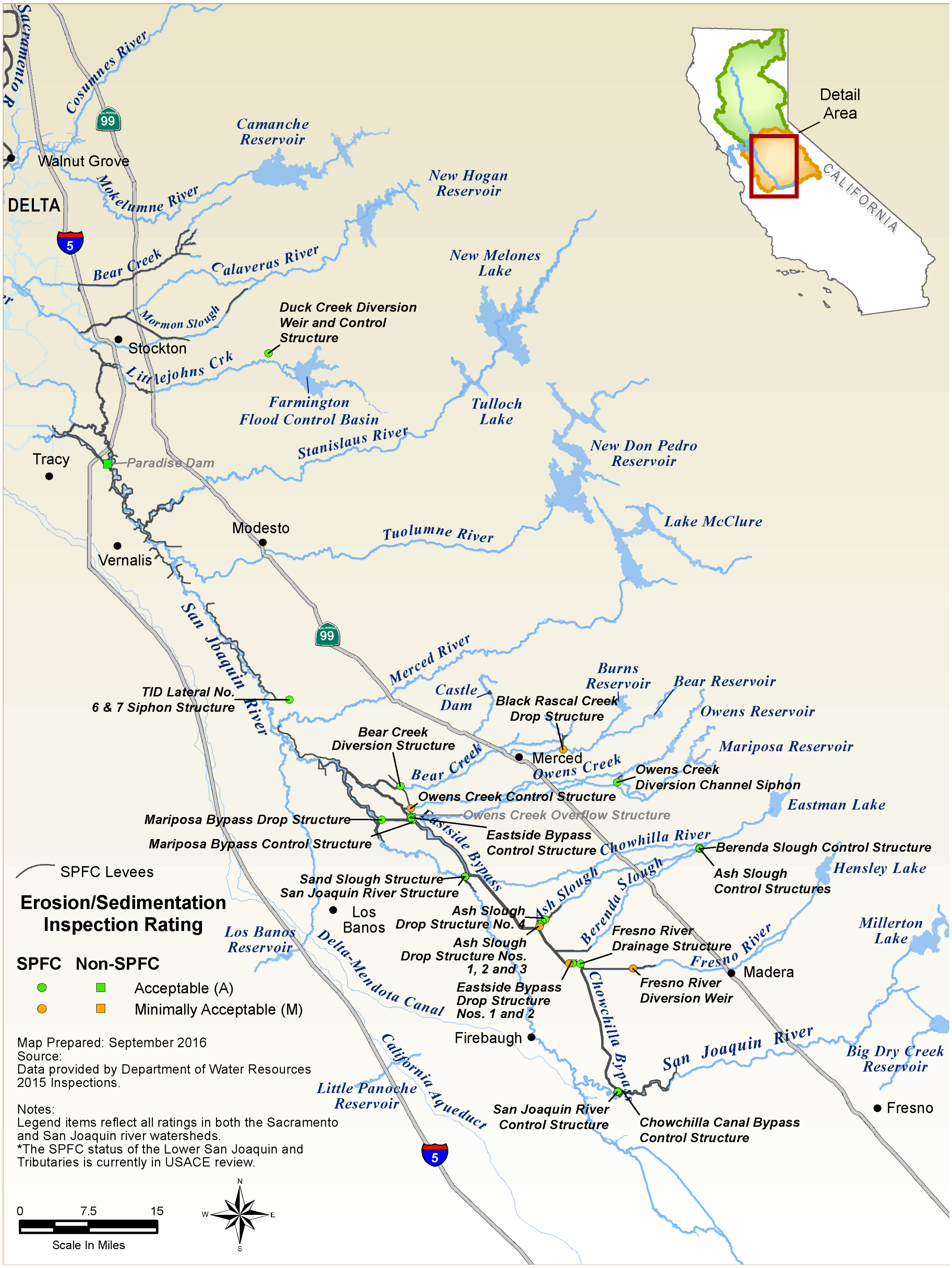
Figure 6-6. Hydraulic Structures – Encroachment Conditions in the San Joaquin River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.

Figure 6-7. Hydraulic Structures – Erosion/Bank Caving and Shoaling/Sedimentation Conditions in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
Legend items reflect all ratings in both the Sacramento and San Joaquin river watersheds.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 6-8. Hydraulic Structures – Erosion/Bank Caving and Shoaling/Sedimentation Conditions in the San Joaquin River Watershed

Table 6-4. Hydraulic Structure Conditions Summary (2015)

Inspection Category	SPFC Hydraulic Structures[1]			Non-SPFC Hydraulic Structures[1,2]		
	Unacceptable	Minimally Acceptable	Acceptable	Unacceptable	Minimally Acceptable	Acceptable
Structural	0	6	43	0	0	3
Vegetation/ Obstructions	0	13	36	0	3	0
Encroachment	2	1	46	0	0	3
Erosion/Bank Caving Shoaling/ Sedimentation	0	6	43	0	1	2

Notes:

[1] Information is summarized for hydraulic structures inspected by DWR in 2015, only.

[2] Non-SPFC hydraulic structures summarized are inspected by DWR as part of the federal project, but not as part of the SPFC because they lack documentation of assurances of nonfederal cooperation from the Board to USACE.

Key:
SPFC = State Plan of Flood Control

6.2 Pumping Plants

Pumping plants discharge drainage water into adjacent channels to reduce localized flooding. The evolution of criteria and DWR inspections related to pumping plants is the same as described for hydraulic structures in Section 6.1.

6.2.1 Status Evaluation Methodology

Annual inspections for pumping plants are presented in the DWR 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015b). Eleven SPFC pumping plants and two non-SPFC pumping plants were inspected. Pumping plants were rated as Acceptable (A), Minimally Acceptable (M), or Unacceptable (U) based on numerous inspection categories. Table 6-5 shows DWR inspection rating descriptions for pumping plants.

Detailed rating criteria for each inspection category can be found in the DWR 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System, Appendix C (DWR, 2015b).

Table 6-5. Pumping Plant Inspection Rating Descriptions

Inspection Rating	Rating Description
Acceptable (A)	Weighted calculation of Acceptable, including consideration of operating log, O&M manual, plant building, communications, safety, cranes, pumps, power, motors, engines, fans, gear reducers, pump control systems, sumps/wet well, trash racks, trash rakes, sluice/slide gates, electric gate operators, manual gate operators, other metallic items, flap gates, closure structures, security fencing, intake and discharge pipes, and pressurized pipes.
Minimally Acceptable (M)	Weighted calculation of Minimally Acceptable, including consideration of elements above.
Unacceptable (U)	Weighted calculation of Unacceptable, including consideration of elements above.

Key:
O&M = operations and maintenance

6.2.2 Limitations of Status Evaluations

This evaluation covers only pumping plants inspected by DWR, and is limited to conditions that were visually inspected, annually, during the summer 2015 inspection. Status information for other pumping plants in the flood management system (non-SPFC) is not included because it was not available.

6.2.3 Results of Status Evaluations

Pumping plant conditions from annual inspections in 2015 (DWR, 2015) are presented in Figure 6-9 for the Sacramento and San Joaquin river watersheds. Of the 13 pumping plants inspected, no pumping plants were rated as Unacceptable and one pumping plants was rated as Minimally Acceptable.

Ongoing and planned remedial actions and ongoing actions to improve future evaluations are summarized in Appendix C, Section C-2.

6.3 Bridges

DWR maintains and inspects some bridges in the Sacramento Watershed in accordance with California Water Code Section 8361 (c), and does not maintain or inspect any bridges in the San Joaquin River watershed. Before 2008, DWR did not conduct a separate annual inspection for bridges, but inspected bridges as components of overall channel inspections for conveyance capacity under the DWR Annual Inspection Program. Many bridges in the SPFC were designed and built before other SPFC facilities were constructed. In most cases, conveyance capacity through bridge openings was incorporated into SPFC levee and channel design. However, in some instances, encroachment into the floodflow capacity caused by bridges was not addressed as part of the design capacity (e.g., a bridge is lower than the design stage and/or levees at the bridge abutment have insufficient freeboard or are below the design stage). Bridges constructed after other SPFC facilities were generally evaluated by USACE and the Board so that bridges would not impact flows and/or impede flood emergency and/or maintenance operations.

6.3.1 Status Evaluation Methodology

DWR evaluated the condition of bridges against current maintenance standards using the results of annual bridge inspections in 2015 through the DWR Bridge Inspection Program. Inspection criteria for DWR’s inspection logs were customized to each bridge based on the material used to construct the bridge. Visual inspections were performed on each DWR-maintained bridge regarding safe passage by evaluating the following: foundation scour, abutment erosion, approach grades, and overall structural integrity. Concrete bridges were inspected for cracks, chips, spalling, joint separation, and exposed rebar. Wooden structures were inspected for deterioration, cracking, joint and fastener separation, and wear. Inspection rating descriptions for bridges are listed in Table 6-6, with inspection elements listed above categorized for bridge deck conditions, foundation conditions, approach conditions, foundation scour, and spalling concrete.

Pumping Plant Inspection Ratings

SPFC

- 🟢 Acceptable (A)
- 🟠 Minimally Acceptable (M)

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure 6-9. Pumping Plant Conditions in Sacramento and San Joaquin River Watersheds

Table 6-6. Bridges Inspection Rating Descriptions

Inspection Categories	Rating and Description
Deck Conditions, Foundation Conditions, Approach Conditions, Foundation Scour, and Spalling Concrete	1. Bridge is excellent condition. No visual inadequacies noted.
	2. Bridge has areas of minor cosmetic inadequacies; however, it appears to be in good working condition.
	3. Bridge is in fair condition. The bridge has minor observable inadequacies; however, it remains in good working condition.
	4. Bridge is in need of repair. The bridge condition does not pose an immediate hazard to the public.
	5. Bridge needs immediate repairs. The bridge condition poses an immediate hazard to the public.

6.3.2 Limitations of Status Evaluations

As mentioned, DWR only maintains and inspects the bridges shown in Figure 6-10 in accordance with California Water Code Section 8361(c). DWR does not maintain or inspect any bridges in the San Joaquin River watershed. Reported conditions are limited to items that can be visually inspected annually during summer, and does not involve additional testing by DWR. Status information for other bridges in the flood management system is not included because it was not available.

6.3.3 Results of Status Evaluations

Bridge conditions noted from the DWR Bridge Inspection Program are presented on Figure 6-10 for the Sacramento River watershed. Detailed description, of the DWR inspections can be found in the DWR Annual Bridge Inspection Report (DWR, 2015a).

Of the 11 bridges inspected by DWR, two had ratings of 4 and 5 overall, and were noted as needing repairs. Since 2000, three Sutter Basin bridges (not inspected by DWR or depicted in Figure 6-10) have been replaced and turned over to Sutter County for future O&M.

Ongoing and planned remedial actions and ongoing actions to improve future evaluations are summarized in Appendix C, Section C-3.

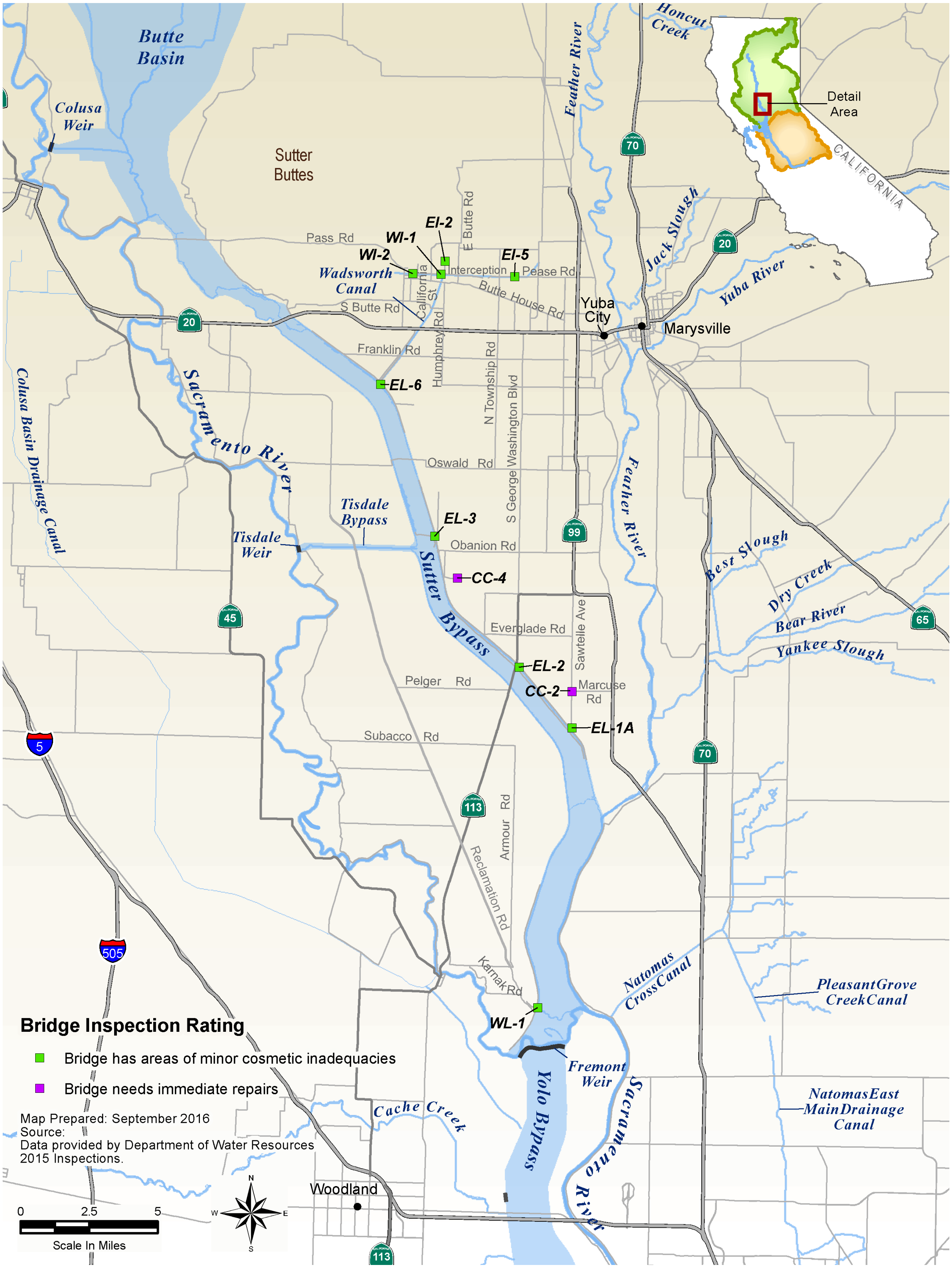


Figure 6-10. Bridge Conditions in the Sacramento River Watershed

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7.0 Approach for SPFC Improvements

Sections 4.0, 5.0, and 6.0 of this 2017 FSSR describe physical conditions of SPFC levees, channels, and flood control structures based on best available information. In some areas of the Sacramento and San Joaquin watersheds, not enough information is available to determine whether SPFC facilities are performing to their expected level. While some SPFC facilities meet their intended performance standards, many do not; they may show visible distress, or otherwise have problems that could impair how the facilities function. These problems likely increase the chances that facilities could fail and contribute to major flooding.

DWR has plans and programs to further evaluate SPFC facility performance, identify needed flood system reconstructions and improvements, and implement reconstructions and improvements as State, federal, and local funding becomes available. This section provides an overview of DWR's systematic approach for addressing problems with flood management facilities and for taking actions to improve SPFC performance supported by the 2012 CVFPP and 2017 CVFPP Update.

7.1 2017 Central Valley Flood Protection Plan Update

The CVFPP is the primary vehicle for addressing problems identified in this 2017 FSSR, and further improvements to the SPFC. It is highlighted again in this section because the CVFPP addresses how to correct, improve, and manage the SPFC. DWR prepared and the Board adopted, the CVFPP in June 2012 to meet legislative requirements. The plan is being updated every 5 years thereafter (in years ending in 7 and 2). As the first edition of this long-term planning document was completed in 2012, the 2017 CVFPP Update will continue to guide State investments for improving integrated flood management in the Sacramento-San Joaquin Valley.

The 2017 CVFPP Update represents a sustainable, integrated flood management plan that will continue to guide State, federal, and local actions to improve flood management in this vital region of the State. To adequately address current and increasing future demands on the SPFC, significant and sustained actions are needed to improve the performance level of SPFC facilities that exist today. Implementing a portfolio of actions to address identified problems as part of a systemwide approach to improving flood management throughout the Sacramento and San Joaquin river watersheds will take many years and significant coordination between local, State, and federal governments.

The CVFPP describes a recommended implementation approach that considers priorities and program phasing. Implementation phasing must account for relationships between upstream and downstream actions, while also ensuring that near-term actions are feasible in terms of readily available funding, secured cost-sharing, stakeholder coordination, and other important factors. Phased implementation will also help accommodate the timing of project design, permitting, land acquisition, stakeholder alignment and partner costshare funding availability.

A range of actions will be required to develop, construct, and manage improvements to the SPFC. This work will be organized into several programs, established and led by DWR and implemented in coordination with local and federal partners. Each program will be responsible for specialized implementation. Together, the programs cover all work required for implementation and management of the improved SPFC. DWR's major flood management programs are as follows:

- Flood Emergency Response Program
- Flood System Operations and Maintenance Program
- Floodplain Risk Management Program
- Flood Risk Reduction Projects Program
- Flood System Management Planning

The first three programs are responsible for residual risk management. The fourth program is responsible for implementing on-the-ground projects for SPFC improvement. The last program is responsible for conducting feasibility evaluations, design, engineering, and other activities necessary for implementation.

As described in Section 1.1, the SPFC Descriptive Document has been updated (August 2017) along with this 2017 FSSR to support the 2017 CVFPP Update.

Following Board adoption of the 2012 CVFPP and its attached Conservation Framework, DWR developed a Conservation Strategy to support development of the 2017 CVFPP Update. It supports the attainment of all CVFPP goals, but focuses on the integration and improvement of ecosystem functions with flood risk reduction projects where feasible. The Conservation Strategy and its appendices describe the basis for recommending various conservation actions and setting long-term objectives for the Central Valley flood management system. The integration of specific ecosystem restoration features with DWR's proposed flood management system improvements will be further described in the 2017 CVFPP Update and supporting documents such as the Sacramento River BWFS and the San Joaquin River BWFS. The Conservation Strategy also is aligned with the CVFPP as a whole and is consistent with the "key actions" identified within the California Water Action Plan. A complete version of the Conservation Strategy is noted in the reference section of this 2017 FSSR. The Central Valley Integrated Flood Management Study, which is being led by USACE, is the federal complement to the CVFPP and focuses on shared opportunities to reduce flood risk in the Central Valley in an integrated water resource and flood management context. Both studies have the common goal of determining a State-federal strategy that will lead to expedient and cost-shared implementation of new and continuing projects to reduce flood risk in the Central Valley. USACE participated in CVFPP development, providing valuable input on all phases of the plan, producing joint data and technical information, and assisting in use of analytical tools. USACE is also providing technical expertise in developing flood hydrology, analyzing reservoir operations, and incorporating risk-based decision-making processes that improve system reliability.

In summary, DWR has plans and programs to further evaluate the status of facility performance, identify needed flood system improvements, and implement those improvements as State, federal, and local funding becomes available. The CVFPP, in particular, will guide improvement and management of the SPFC in the future.

8.0 Findings and Recommendations

This section summarizes major 2017 FSSR findings and recommendations that are also described in the 2017 CVFPP Update.

8.1 Findings

The flood management system has provided tremendous benefits to public safety and protection of property in the Central Valley; the system has prevented many billions of dollars in flood damages since facilities were originally constructed. However, today, the system is being relied on to provide flood protection and other public benefits at levels that were not envisioned when the system was constructed, including providing recreation and environmental/ecosystem benefits. When evaluated against modern engineering and safety criteria, some SPFC facilities face a higher chance of failure during a flood event than other facilities.

The SPFC includes approximately 1,420 miles of levees and approximately 2,600 miles of channels. Of the SPFC levees evaluated by the DWR Levee Evaluations Program, about 320 miles of those levees help protect urban areas and about 1,100 miles help protect nonurban areas. Associated with the SPFC levees are about 300 miles of non-SPFC levees (i.e., 110 miles of urban levees and 190 miles of nonurban levees) that are instrumental to effective functioning of the SPFC. Information from the State Plan of Flood Control Existing Channel Capacity Assessment Technical Memorandum (CVFED Program, 2009), supplemented with project-specific modeling results, supported evaluation of 1,025 miles of SPFC channels. The overall condition of urban levees, nonurban levees, channels, and flood control structures of the SPFC are summarized as follows:

- **Urban levees** – Approximately half of about 320 miles of SPFC urban levees evaluated do not meet current levee freeboard, stability, or seepage design criteria[13] at the design water surface elevation.
- **Nonurban levees** – Approximately half of about 1,100 miles of SPFC nonurban levees evaluated have a high potential for failure from underseepage, through seepage, structural instability, and/or erosion at the assessment water surface elevation.[14] Nonurban levees were evaluated based on systematic, consistent, repeatable analyses that correlated geotechnical data with levee performance history, not relative to any current design criteria.[15]

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[13] The design criteria used were based on USACE's EM 1110-2-1912, Design and Construction of Levees (USACE, 2000) and DWR's ULDC (DWR, 2012a).

[14] Where available, 1955/57 design water surface elevations were used as the assessment water surface elevation. In the absence of 1955/57 design water surface elevations, the assessment water surface elevation was based on freeboard requirements for each levee segment (i.e., generally 3 feet below the levee crest).

[15] This approach was selected because the extent of NULE is significantly greater than ULE, making it difficult to conduct the same level of field explorations and geotechnical data collection performed for ULE levees.

- **SPFC channels** – Approximately half of the 1,025 miles of channels evaluated in the SPFC have a potentially inadequate capacity to convey design flows, and require additional evaluation to confirm conditions.
- **SPFC flood control structures** – None of the 49 hydraulic structures or 13 pumping plants inspected by DWR for the SPFC were rated Unacceptable during 2015 inspections. Of the 11 SPFC bridges inspected by DWR in 2015, two were in need of repair.

Many potential factors can influence levee performance, and the threats these factors pose are not all equal. Table 8-1 lists factors that influence facility performance, findings related to each factor, and the relative threat posed by the factor. The relative threat posed by each factor is a subjective representation of the prevalence of the factor and the degree to which the presence of that factor would contribute to potential facility failure. Factors identified as a high relative threat to SPFC facilities generally are the most prevalent and/or greatly contribute to potential facility failure. Those identified as a low relative threat to SPFC facilities generally are the least prevalent and/or contribute less to potential facility failure. Likewise, factors identified as a medium relative threat to SPFC facilities are moderately prevalent and/or contribute moderately to potential facility failure. Therefore, the relative threat posed by each factor is subjective in nature and serves only to help identify and prioritize the factors most likely to contribute to SPFC facility failure. However, prioritizing relative threats affecting SPFC facilities does not necessarily translate directly into investment priorities. To decide which levels of investment are prudent for repairs or improvements, economic and life safety consequences associated with potential failure must also be considered. Potential consequences of facility failure are not presented in this report; they are evaluated in the CVFPP.

Table 8-1. Summary of 2017 Flood System Status Report Findings

	Factors	Findings	Relative Threat Posed by Factor[1]
Levees	**Overall Levee Condition (multiple factors)**	• Approximately half of SPFC urban levees do not meet current levee freeboard, stability, or seepage design criteria at the design water surface elevation. • Approximately three-fifths of SPFC nonurban levees have a high potential for levee failure from underseepage, through seepage, structural instability, and/or erosion at the assessment water surface elevation.	N/A
	Levee Geometry Check	• Approximately one-third of SPFC urban levees deviate from current standard levee design prism criteria. • Levee geometry deviates significantly from the standard levee design prism for some nonurban SPFC levees.	Medium
	Seepage	• Approximately one-third of SPFC urban levees do not meet current seepage design criteria. • Almost half of SPFC nonurban levees have a high potential for levee failure from underseepage. • Approximately one-quarter of SPFC nonurban levees have a high potential for levee failure from through seepage.	High
	Structural Instability	• Approximately one-fifth of SPFC urban levees do not meet current structural stability design criteria. • Approximately one-eighth of SPFC nonurban levees evaluated in the Sacramento River watershed and 1 percent in the San Joaquin River watershed have a high potential for levee failure from structural instability.	Medium

Table 8-1. Summary of 2017 Flood System Status Report Findings

	Factors	Findings	Relative Threat Posed by Factor[1]
Levees (cont)	**Erosion**	- Erosion assessments for urban levees are underway, and results are not available at this time. - Almost one-seventh of SPFC nonurban levees have a high potential for levee failure from erosion.	Medium
	Settlement	- Four known localized levee locations have settlement (localized depressions) that endangers the integrity of the SPFC levees. [5]	Low
	Penetrations[2]	- More than 6,000 penetration sites are documented in SPFC levees, and many more remain undocumented.	Medium
	Levee Vegetation	- About 309 miles of SPFC levees are noncompliant with the 2012 CVFPP	Low
	Rodent Damage	- More than one-third of the 1,459 miles of SPFC levees studied had at least eight reported occurrences of burrowing activity over a 21-year study span.	Medium
	Encroachments[4]	- Approximately 1,730 encroachment sites were identified	Medium
Channels	**Inadequate Conveyance Capacity**	- Approximately half of the 1,016 miles of SPFC channels evaluated are potentially inadequate to convey design flows, and require additional evaluation to confirm conditions. - Approximately one-quarter of channel design capacities reported in O&M manuals do not agree with flows specified in the design profiles.	Medium
	Channel Vegetation	- Of the 233 miles of SPFC channels inspected by DWR, 13 locations were rated as Unacceptable and 56 locations were rated Minimally Acceptable because of vegetation and obstructions.[5]	Low
	Channel Sedimentation	- Of the 233 miles of SPFC channels inspected by DWR, eight locations were rated Unacceptable and 26 locations were rated Minimally Acceptable because of shoaling/sedimentation.[5]	Low
Structures	**Inadequate Hydraulic Structures**	- Of the 49 SPFC hydraulic structures inspected by DWR, none were rated as Unacceptable and eight were rated as Minimally Acceptable.[5]	Low
	Inadequate Pumping Plants	- Of the 13 SPFC pumping plants inspected by DWR, none were rated Unacceptable and only one was rated Minimally Acceptable.[5]	Low
	Inadequate Bridges	- Of the 10 SPFC bridges inspected by DWR, two were in need of repairs.[5]	Low

[1] The relative threats listed in Table 8-1 were generated based on professional experience of technical staff from DWR and partner agencies.

[2] Penetrations include man-made objects that cross through or under a levee or floodwall and have the potential to provide a preferential seepage path or hydraulic connection with the waterside. Typically, a penetration is a pipe or transportation structure, such as a roadway or rail line.

[3] This finding is based on DWR's CVFPP Levee Vegetation Management Strategy criteria (DWR, 2012b) and not on USACE levee vegetation criteria. Comparison with USACE levee vegetation criteria would show more SPFC levees as noncompliant.

[4] Encroachments are any obstruction or physical intrusion by construction of works or devices, planting or removal of vegetation, or caused by any other means, for any purpose, into a flood control project, waterway area of the flood control project, or area covered by an adopted plan of flood control (California Code of Regulations Title 23 Chapter 1 Article 2 Section 4 (m)). Encroachments include boat docks, ramps, bridges, sand and gravel mining, placement of fill, fences, retaining walls, pump stations, residential structures, and irrigation and landscaping materials/facilities.

[5] Inspection results reported are from DWR's 2015 Inspections.

Key:

DWR = California Department of Water Resources
O&M = operations and maintenance
USACE = United States Army Corps of Engineers
N/A = Not applicable
SPFC = State Plan of Flood Control

The findings in Table 8-1 are relative to DWR's current criteria for use in the CVFPP. In most cases, these criteria are identical, or similar to USACE criteria. However, differences between DWR and USACE levee vegetation criteria are significant enough that comparison of levees with USACE criteria would likely show more SPFC levees as noncompliant with current USACE criteria. As noted in Section 4.7, DWR and USACE continue to work to resolve these differences.

To adequately address current and increasing future demands on the SPFC, significant and sustained actions are needed to improve the performance level of SPFC facilities that exists today. This will include continued efforts at the State, federal, regional, and local levels to assess and evaluate programs and policies affecting the SPFC and conditions of non-SPFC facilities that affect performance of the flood control system. Implementing an appropriate collection of management actions in a systemwide approach to address identified problems properly, and to improve the conditions of flood management throughout the Sacramento and San Joaquin river watersheds will take many years. It is important to recognize that improvements to the SPFC will be costly and will require the active involvement of State, federal, regional, and local interests. Significant amounts of funding will be needed for future project planning, development, implementation by USACE and the State, and for O&M primarily by maintaining agencies.

Local communities (both urban and nonurban) will require significant financial and technical assistance from the State and federal governments over the next 25 to 30 years to take appropriate actions to improve the current condition of SPFC facilities. FSSR findings provide important input on system conditions for the CVFPP. As mentioned, the CVFPP will guide future State investments through incremental projects to address identified problems in the SPFC.

8.2 Recommendations

As mentioned, California Water Code Section 9120 directs that this 2017 FSSR must to include appropriate recommendations regarding SPFC levees and future work activities. Recommendations regarding potential modifications to the SPFC will be included in the 2017 CVFPP Update. Recommendations regarding future work activities considered important for supporting future efforts as part of the CVFPP include the following:

- Pursue Board adoption of the findings of this 2017 FSSR, as required by California Water Code Section 9120, and support the Board in communicating 2017 FSSR recommendations to the California Legislature.

- Per California Water Code Section 9120(a), Continue to work with State, federal, regional, and local agencies to create a broadly supported CVFPP to guide long-term investments related to the SPFC over the next several decades.

- Build on and improve existing partnerships with federal, regional, and local agencies to develop site-specific actions for the SPFC that are consistent with the integrated, systemwide approach developed in the CVFPP. Recognize that the public expects the flood system to provide other important benefits, such as water supply conveyance, environmental/ecosystem functions, recreation, and other beneficial uses.

- Continue to partner with agencies, and form new partnerships to conduct special studies to improve understanding of the various factors that present threats to SPFC facilities. These studies include continued efforts to research the impacts of levee vegetation, assess locations and importance of levee penetrations, characterize the probability of levee failure, and other technical studies.

- Proceed with multiagency work efforts to further evaluate facility status, identify needed flood system reconstructions and improvements, and implement them, as State, federal, and local funding becomes available.

- Continue to improve data sharing and accessibility of annual inspection results for partner agencies and the public.

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10.0 Acronyms and Abbreviations

AB	Assembly Bill
Board	Central Valley Flood Protection Board
CVFED	Central Valley Floodplain Evaluation and Delineation
CVFPP	Central Valley Flood Protection Plan
DFG	California Department of Fish and Game
DWR	California Department of Water Resources
EC	Engineer Circular
EM	Engineer Manual
ETL	Engineer Technical Letter
FSRP	Flood System Repair Project
FSSR	Flood System Status Report
FEMA	Federal Emergency Management Agency
FloodSAFE	FloodSAFE California
FMO	DWR Flood Maintenance Office
GIS	geographic information system
HDPE	high density polyethylene
LiDAR	light detection and ranging
NMFS	National Marine and Fisheries Service
NULE	Nonurban Levee Evaluations Project
O&M	operations and maintenance
PL	Public Law
PVC	polyvinyl chloride
SPFC	State Plan of Flood Control
State	State of California
UCIP	Utility Crossing Inspection Program
ULDC	Urban Levee Design Criteria
ULE	Urban Levee Evaluations Project
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VMS	Vegetation Management Strategy
VMZ	vegetation management zone

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Appendix A – Levee Status

August 2017

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

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Appendix A – Levee Status

This appendix provides additional supporting information about levee physical conditions. The levee status overview includes data that reflect the impacts of multiple levee status factors on levee conditions. These data include information from United States Army Corps of Engineers (USACE) Periodic Inspection results, about historical levee breaches and overtopping locations, and a summary of Early Implementation Program projects, Central Valley Flood Protection Board (Board) projects, and other modifications to State Plan of Flood Control (SPFC) facilities. Sections A-2 through A-10 of this appendix are organized by levee status factor, and correspond to the subsections in Section 4.0 of the 2017 Flood System Status Report (FSSR) main document. Additional inspection and/or evaluation data, recent, ongoing, and planned remedial actions/improvements, and ongoing actions to improve future evaluations are described for each levee status factor.

A.1 Levee Status Overview

This section presents USACE Periodic Inspection results, contains data about historical levee breaches and levee overtopping locations, Early Implementation Program and USACE/Board projects, and other modifications to SPFC facilities.

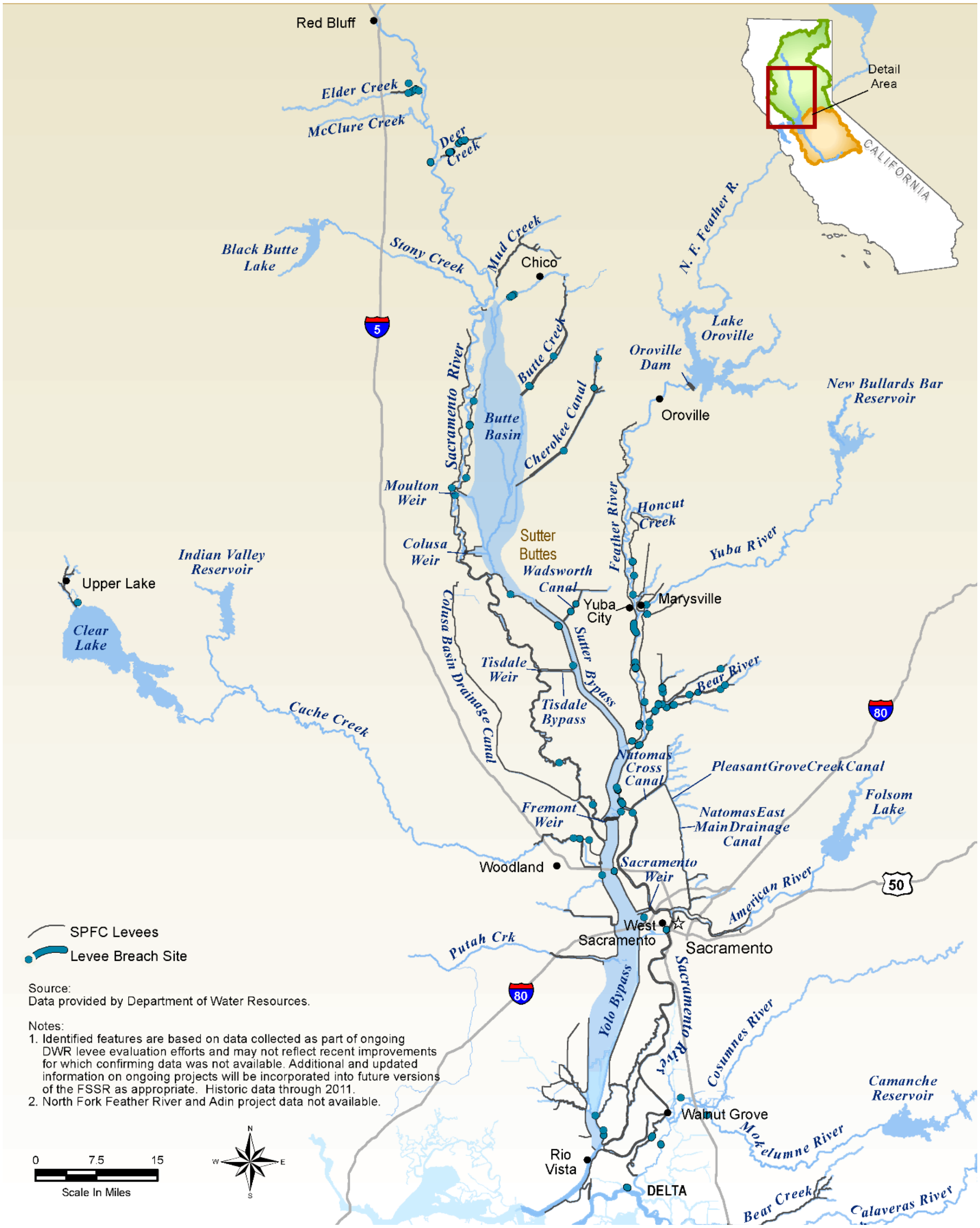
A.1.1 USACE Periodic Inspection Report Cards

USACE Periodic Inspections are conducted to verify proper operations and maintenance (O&M), evaluate operational adequacy and structural stability, identify features to monitor over time, and improve communication regarding overall facility condition and safety. USACE conducts its Periodic Inspections to rate flood damage reduction systems. A flood damage reduction system is a complete and independent unit made up of one or more flood damage reduction segments that collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. USACE Sacramento District (SPK) has completed its Periodic Inspections as of 2015 throughout the Sacramento and San Joaquin river basins. The completed levee systems total approximately 122; associated levee report cards are available as Attachment 1 to this appendix.

A.1.2 Historical Levee Breaches and Overtopping

The California Department of Water Resources (DWR) Levee Evaluations Program collected and cataloged historical levee performance data pertinent to levee assessments in a document database. Data sources include existing levee-related data available from DWR and USACE, levee records available from State of California (State) agencies, the California Levee Database, levee data obtained from local agencies, and interviews with representatives from local agencies, landowners, and DWR personnel. Data were collected about historical evidence of breaching and overtopping. For additional details on this data collection effort with respect to the Nonurban Levee Evaluations Project (NULE), see the Geotechnical Assessment Report for the North NULE Study Area (DWR, 2011a) and the Geotechnical Assessment Report for the South NULE Study Area (DWR, 2011b). The results of this data collection effort under the Urban Levee

Evaluations Project (ULE) are reported in a Geotechnical Evaluation Report for each individual study area. Figures A-1 and A-2 show historical levee breaches and failures in the Sacramento and San Joaquin river watersheds, respectively. Figures A-3 and A-4 show historical levee overtopping events in the Sacramento and San Joaquin river watersheds, respectively.

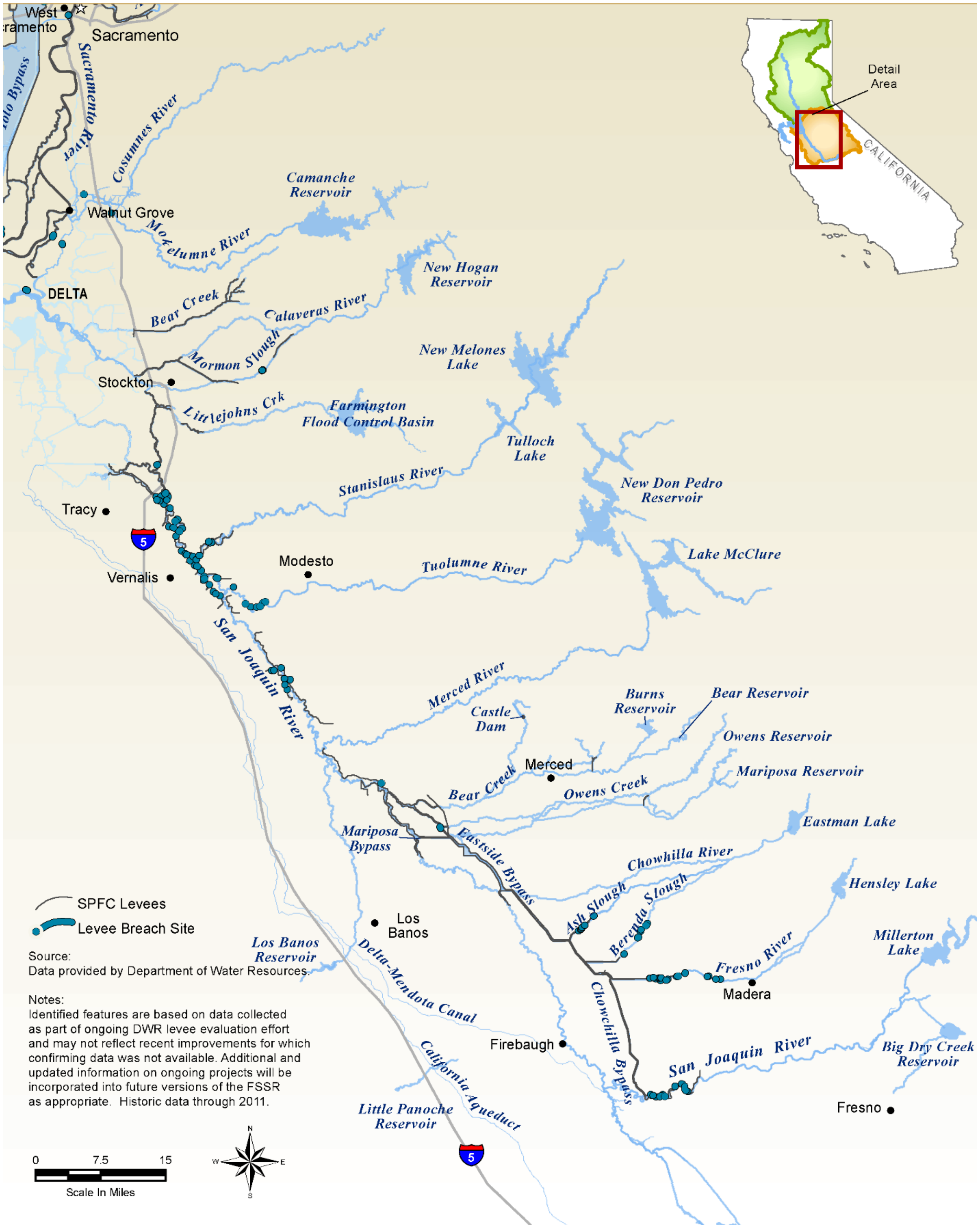


Source:
Data provided by Department of Water Resources.

Notes:

1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

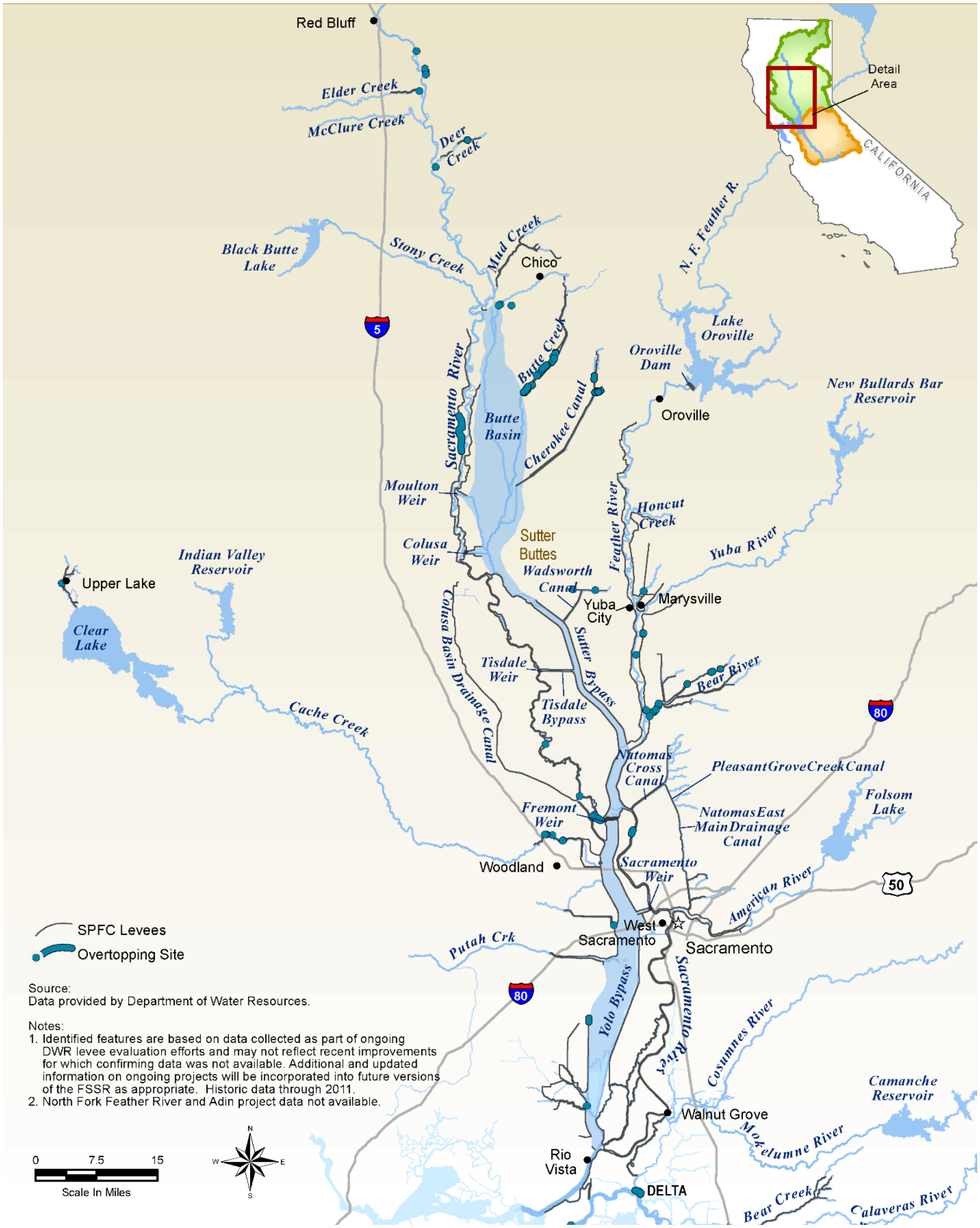
Figure A-1. Historical Levee Breaches in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

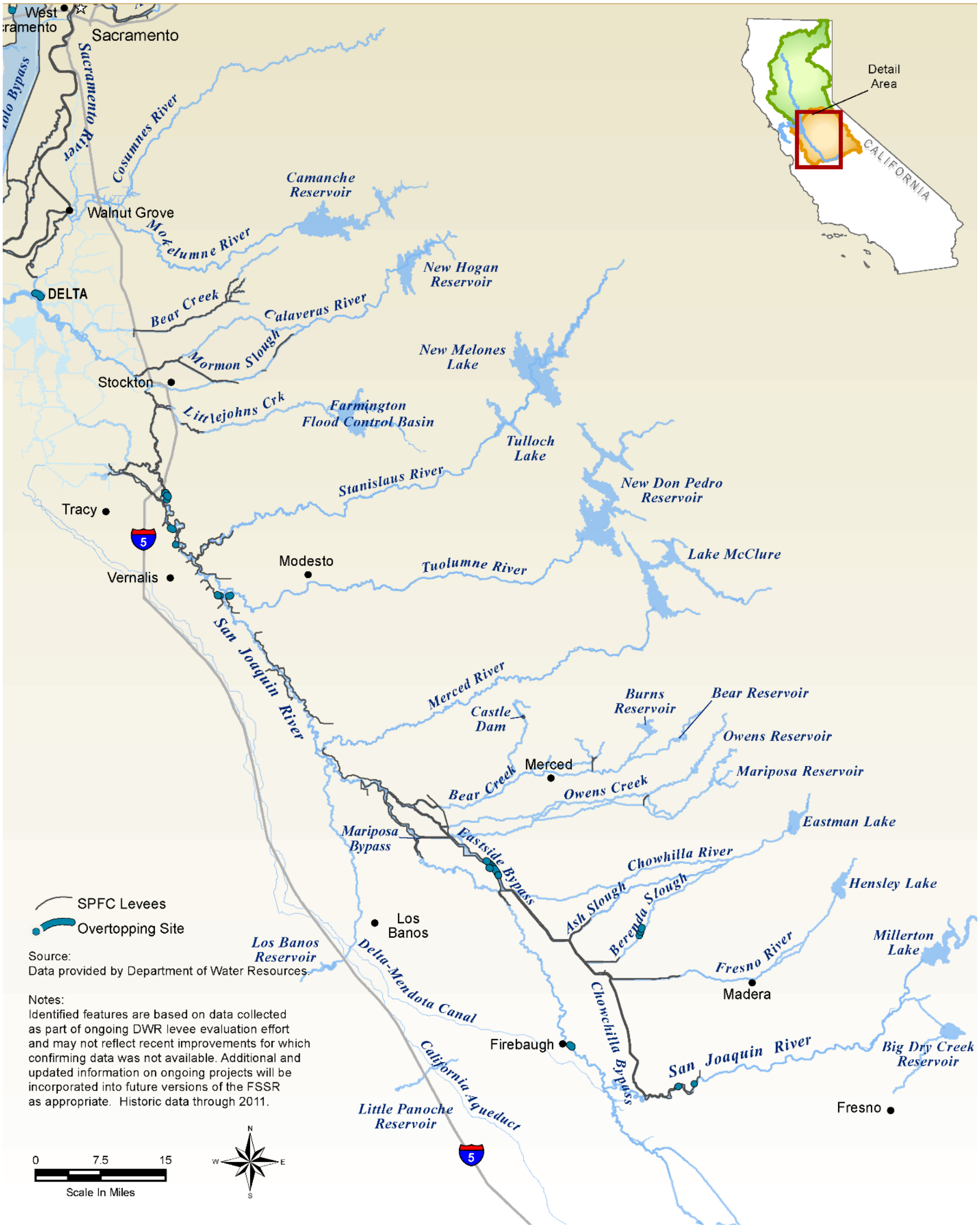
Figure A-2. Historical Levee Breaches in the San Joaquin River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

Figure A-3. Historical Levee Overtopping in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-4. Historical Levee Overtopping in the San Joaquin River Watershed

A.1.3 Summary of Recent Remedial Actions/Improvements

USACE, the Board, and local agencies continue to implement site-specific projects as they become ready for construction. The Early Implementation Program and USACE/Board projects are not part of the SPFC, but may become part of the SPFC after completion of the processes outlined in the SPFC Descriptive Document, Chapter 2and 7 respectively. (DWR, 2016). Locations of current Early Implementation Program and USACE/Board projects are shown in Figure A-5. Further description is included in the SPFC Descriptive Document (DWR, 2016). Finally, other modifications to SPFC facilities have been completed by federal and local entities, but are not currently part of the SPFC because they lack State assurances of nonfederal cooperation to the federal government and/or State authorization.

Early Implementation Program (EIP)

From bond funds made available by Propositions 1E and 84, DWR developed the Early Implementation Program, which helped local agencies implement their projects ahead of 2012 Central Valley Flood Protection Plan (CVFPP) adoption. Early Implementation Program projects had an identified benefit for proceeding before adoption of the 2012 CVFPP, especially if the Early Implementation Program project provides for increased level of protection for urban areas in deep floodplains. None of these projects have received Congressional authorization yet. A brief description of each project and its current status as of June 2016 is provided in Table A-1.

Source: Data provided by Department of Water Resources.

Figure A-5. Early Implementation Program and USACE/Board Projects in Sacramento and San Joaquin River Watersheds

Table A-1. Early Implementation Program Project Summary

Project Name	Project Description	Project Status (June 2016)
LD 1 Setback Levee at Star Bend (Feather River)	Setback levee with a cutoff wall and levee strengthening the existing levee system for the surrounding urban area.	Completed
RD 17 100-Year Levee Seepage Area Project	Construction of cutoff walls, levee strengthening, seepage berms and setback levees to the existing system for the surrounding urban areas of South Stockton, Lathrop, and Manteca.	65% Design Conference is currently postponed.
RD 2103 Bear River North Levee Rehabilitation Project	Construction of cutoff walls where underseepage gradients on the landside toe exceed USACE criteria.	Closeout phase
SAFCA Natomas Levee Improvement Program (RD 1000)	Construction of cutoff walls and levee strengthening and reshaping features of the existing levee system surrounding the Natomas Basin.	Construction phase
TRLIA (RD 784) Feather River Levee Improvement Project	Construction of levee repairs and setback levees.	Transfer of real estate intereset to DWR.
TRLIA (RD 784) Upper Yuba Levee Improvement Project	Construction of levee repairs and setback levees.	Construction phase
WSAFCA West Sacramento Levee Improvement Project	Construction of levee improvements to achieve a 200-year level of protection.	Southport levee setback under construction – June 2016.

Key:
LD = levee district
RD = reclamation district
SAFCA = Sacramento Area Flood Control Agency
TRLIA = Three Rivers Levee Improvement Authority
USACE = United States Army Corps of Engineers
WSAFCA = West Sacramento Area Flood Control Agency

USACE/Board Projects

USACE, in partnership with the Board, is currently designing and constructing several projects that will improve the flood management system in the Sacramento and San Joaquin river watersheds. These projects reduce the occurrence and consequences of flooding. All USACE/Board projects have received Congressional authorization and have Board assurances of nonfederal cooperation contained in a project agreement. A listing and brief description of USACE/Board projects that are in design, construction, or closeout phases and their current status as of June 2016, is provided in Table A-2. In addition to the projects listed in Table A-2, several feasibility-level investigations are ongoing within the Sacramento and San Joaquin river watersheds. As these investigations proceed toward specific projects and detailed design, construction, or closeout phases, they will be included in future updates to the FSSR.

Table A-2. USACE/Board Project Summary

Project Name	Project Description	Project Status (June 2016)
American River Watershed, Common Features Project	Raise and widen levees and close gaps in slurry walls to prevent flooding in the Sacramento area.	Completed January 2016.
American River Watershed, Folsom Dam Joint Federal Project	Raise the dikes around Folsom Reservoir by 3.5 feet to increase surcharge flood storage.	Design Phase
Hamilton City Flood Damage Reduction and Ecosystem Restoration Project	6.8-mile-long setback levee alignment that will increase the level of flood protection at Hamilton City and restore approximately 1,480 acres along the Sacramento River.	Construction Phase - 2016
Yuba River Basin Project, Marysville Ring Levee Element	Construction of cutoff walls and levee strengthening and reshaping features for the existing levee system surrounding the Marysville urban area.	Construction Phase
Middle Creek Flood Damage Reduction and Ecosystem Restoration Project	Construction of flow-regulation structures to restore vegetation and wetlands.	Awaiting design phase to begin.
South Sacramento County Streams Group Project	Construct channel improvements, floodwalls, levee raising, levees, seepage cutoff walls, and bridge retrofits.	Construction phase; Scheduled Completion October 2016.
West Sacramento Project (Slip Repair)	Levee raising, levee offsets, and slurry wall construction.	Completed
Cache Creek Settling Basin Enlargement	Enlargement of settling basin facilities.	Closeout phase
Sacramento River Bank Protection Project Phase II [1]	Bank protection at identified sites of the Sacramento River Flood Control Project.	Design, construction, and closeout phases for different sites

Note:

1. Because these sites are scattered throughout the Sacramento River watershed and GIS information was not available, the sites are not included on Figure A-5.

Key:
USACE – United States Army Corps of Engineers

A.1.4 Ongoing Actions to Improve Future Evaluations

Levee analyses conducted through the DWR Levee Evaluations Program consider both past and future (projected) performance of levees as they relate to levee geometry, seepage, stability, erosion, and settlement. To perform a detailed evaluation of the levee system's current condition, a range of critical levee properties is being studied, including the following:

- Geomorphology
- Historical events
- Levee topography
- Levee materials and construction
- Subsurface conditions
- Erosion conditions

Traditional and Other Methods

Much of the evaluation of the levees and their foundations is done by relatively straightforward geotechnical exploration methods (e.g., drilling) to collect soil samples, which are then analyzed to assess subsurface conditions. Cone penetrometer testing is also used to determine the composition and properties of subsurface soils. Looking closely at subsurface soil conditions—such as moisture, density, soil grain size distribution, and shear strength—helps identify potential problems or weaknesses in levees. In addition to the basic geotechnical evaluation program of drilling and boring to collect levee soil samples, other proven methods and innovative technologies are being used to develop a comprehensive understanding of the levees' existing subsurface conditions, and identify which areas are most in need of critical improvements or repairs.

Light Detection and Ranging Surveys

Light detection and ranging (LiDAR) technology deployed in low-flying helicopters has been used to electronically gather data about the topography and configuration of flood control levees. Results aid evaluation of levee geometry, stability, erosion, and settlement of the surveyed levees.

Bathymetric Surveys

The above-water topographic data collected during LiDAR surveys have been supplemented with bathymetric surveys. Underwater bathymetric surveys produce detailed topographic data of a riverbed and riverbanks that essentially form the base of the levee systems. The collected data provide an image of the levees' underwater structure that cannot be obtained by conventional land topographic methods. The results aid evaluation of levee geometry and erosion.

Surficial Geomorphic Mapping

A comprehensive surficial geomorphic map of project areas, based on field reconnaissance and review of vintage aerial photos and topographic maps, geologic maps, and satellite imagery, is also being prepared. Results of this effort will lead to a better understanding of the materials directly beneath existing levees and of geomorphic processes, such as erosion and deposition that are responsible for those materials. The collected data will aid evaluation of erosion, seepage, and structural instability.

Electromagnetic Surveys

Levee subsurface conditions are being evaluated by conducting geophysical electromagnetic surveys. The electromagnetic technology senses variations in the ground's electrical conductivity to depths of more than 100 feet underground. The goal is to map important changes in soil types and ground conditions, identifying zones where permeable soils are present or excessive water penetration is taking place. The results aid in evaluation of levee seepage, structural instability, erosion, and settlement.

A.2 Levee Geometry Check

This section describes ULE and NULE freeboard check results, recent remedial actions/improvements (including locations of levee raises, widening, and levee reconstructions), current and ongoing remedial actions/improvements, and ongoing actions to improve future evaluations of levee geometry.

A.2.1 Freeboard Check Results

Lack of levee freeboard can be caused by a variety of factors, such as settlement and inadequate maintenance. A freeboard check was conducted as part of ULE and NULE. For the Sacramento River watershed, the freeboard check consisted of a comparison of the levee crown elevation, as provided by the levee crown survey data from the California Levee Database, to requirements of the 1953 Memorandum of Understanding (USACE and Reclamation Board, 1953). The 1953 Memorandum of Understanding generally requires a minimum of 3 feet of freeboard above the 1955/1957 design water surface elevation for riverine levees and 6 feet of freeboard above the 1955/1957 design water surface elevation for bypass levees.

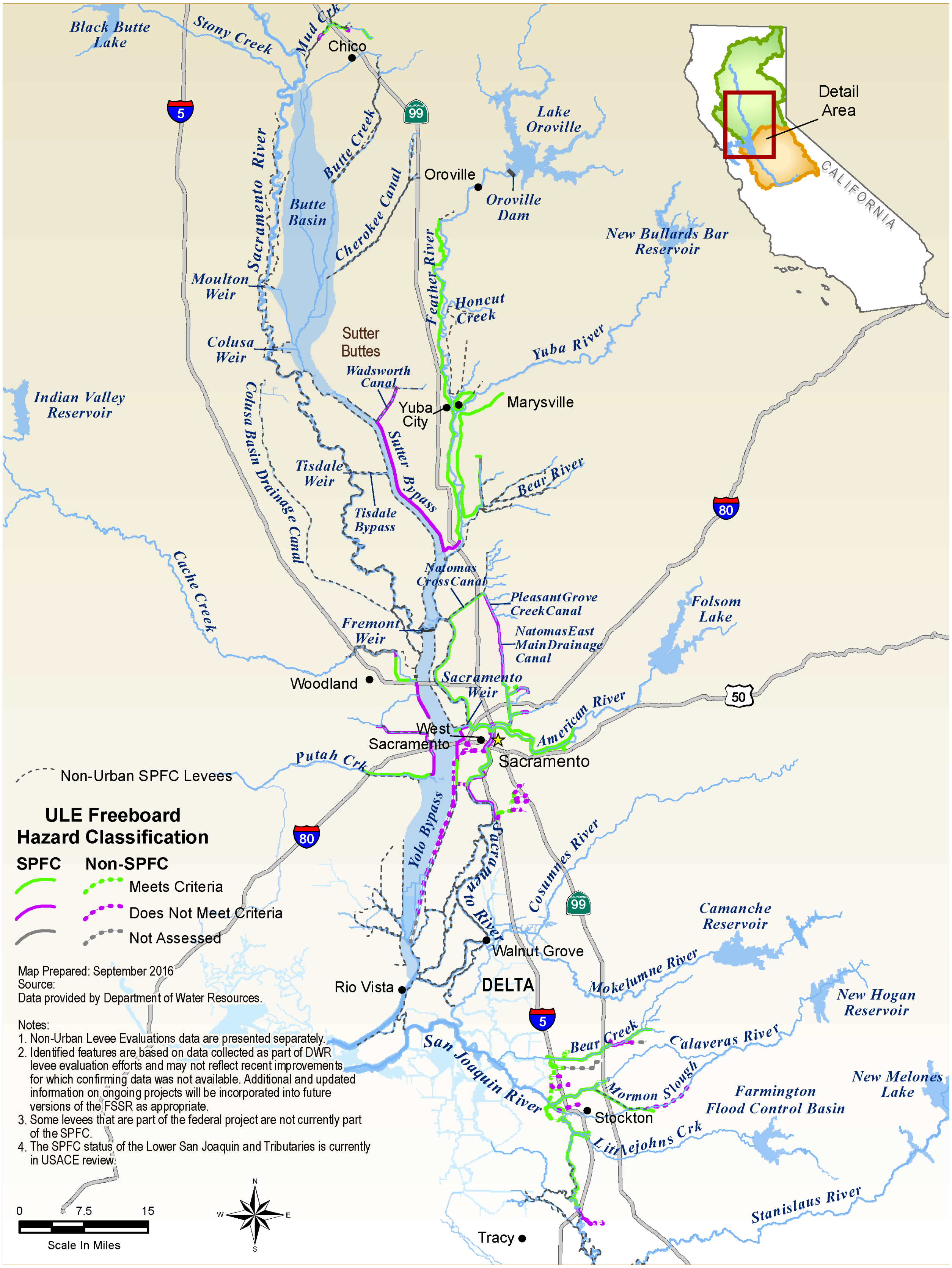
For the San Joaquin River watershed, the freeboard check consisted of a comparison of the levee crown elevation with the design water surface elevation. Freeboard requirements were indicated from available design data. If a levee segment lacked a verifiable design water surface elevation but a 1 percent chance event (100-year) water surface elevation was available, it was used to assess freeboard. Such conditions were specific to the Calaveras and Bear creek systems in San Joaquin County. Where neither a design nor 1 percent chance event water surface elevation were available, the freeboard check could not be performed.

Urban Levee Evaluations Project

ULE evaluations included assessing each ULE levee segment and assigning each segment to one of the following classifications:

- **Meets Criteria (M)** – Levees in this classification meet or exceed criteria.
- **Does Not Meet Criteria (DNM)** – Levees in this classification do not meet criteria. These are the levees that require the most immediate attention for repair or replacement.
- **Not Assessed (NA)** – There was no evaluation completed for a given levee segment or the information obtained was not sufficient to complete a determination of "Meets Criteria", or "Does Not Meet Criteria".

ULE freeboard check results are shown on Figure A-6. Levees that do not meet freeboard criteria include portions of the Pleasant Grove Creek Canal and Natomas East Main Drainage Canal, the levees within the South Sacramento Streams Project, the Davis/Woodland area and along Upper Bear Creek.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:

1. Non-Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-6. ULE Freeboard Check Results

Nonurban Levee Evaluations Project

Figures A-7 and A-8 show a pass or fail result for NULE levee segments in both the Sacramento and San Joaquin river watersheds regarding whether they meet freeboard requirements. Freeboard results show that portions of both banks of the Sutter Bypass, both banks of the Yolo Bypass, Butte Creek, Colusa Basin Drainage Canal, and the Bear River do not meet freeboard criteria. Compliance with freeboard criteria is variable in other areas within the Sacramento River watershed. In the San Joaquin River watershed, levee reaches along the lower Stanislaus River, lower Tuolomne River, San Joaquin River downstream of Merced River, upper Bear Creek and Paddy Creek do not meet freeboard criteria.

For additional details on the NULE freeboard check methodology and results, see the *Geotechnical Assessment Report for the North NULE Study Area* (DWR, 2011a) and the *Geotechnical Assessment Report for the South NULE Study Area* (DWR, 2011b).

A.2.2 Summary of Recent Remedial Actions/Improvements

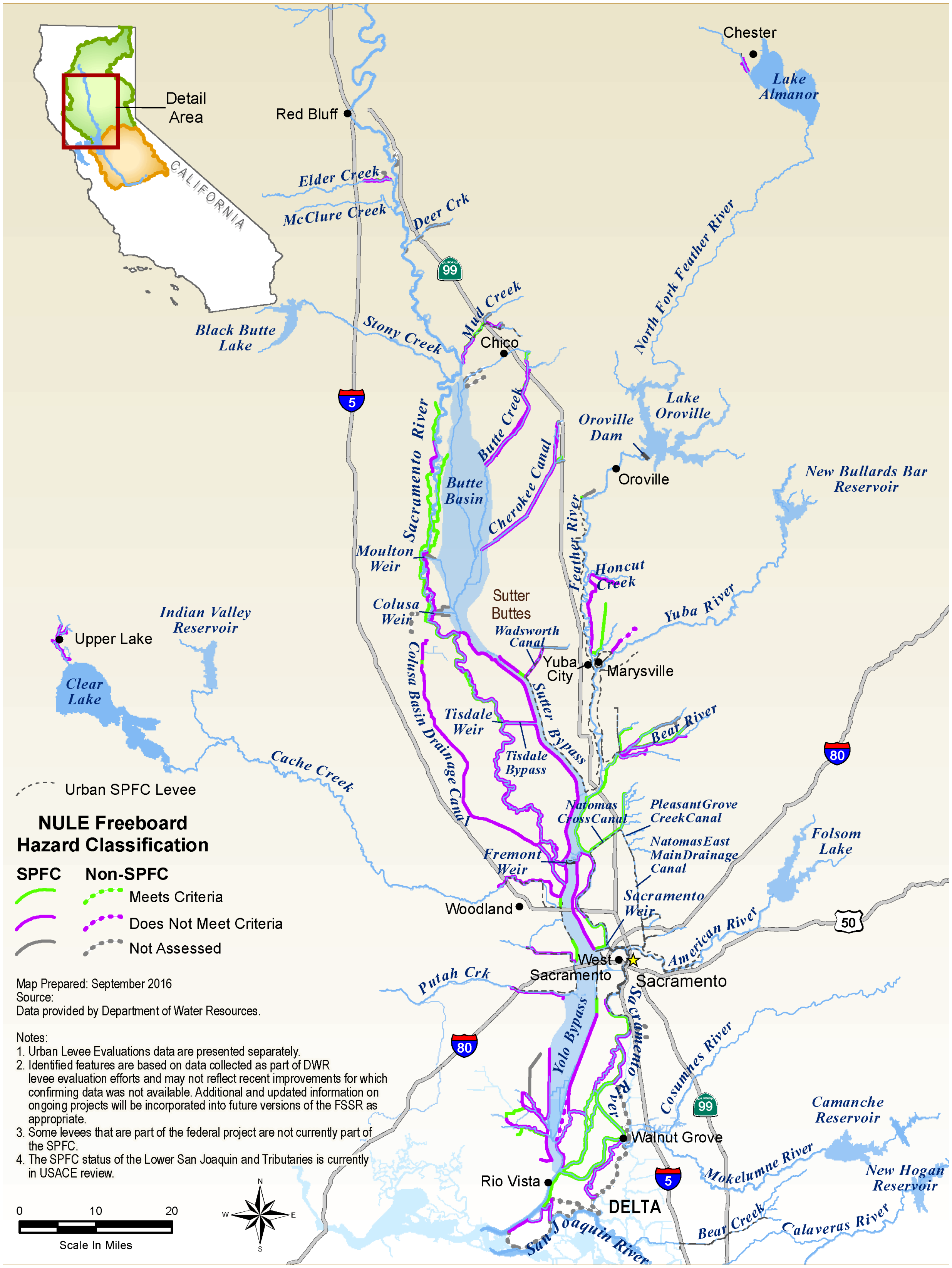
DWR's Levee Evaluations Program collected and cataloged recent levee raises, levee widening, and levee reconstructions. Figures A-9 and A-10 show locations of these documented reconstructions and improvements for the Sacramento River and San Joaquin River watersheds, respectively.

A.2.3 Summary of Ongoing and Planned Remedial Actions/Improvements

Several of the Early Implementation Program and USACE/Board projects discussed in Section A-1 include levee reconstructions and improvements that address inadequate levee geometry.

A.2.4 Ongoing Actions to Improve Future Evaluations

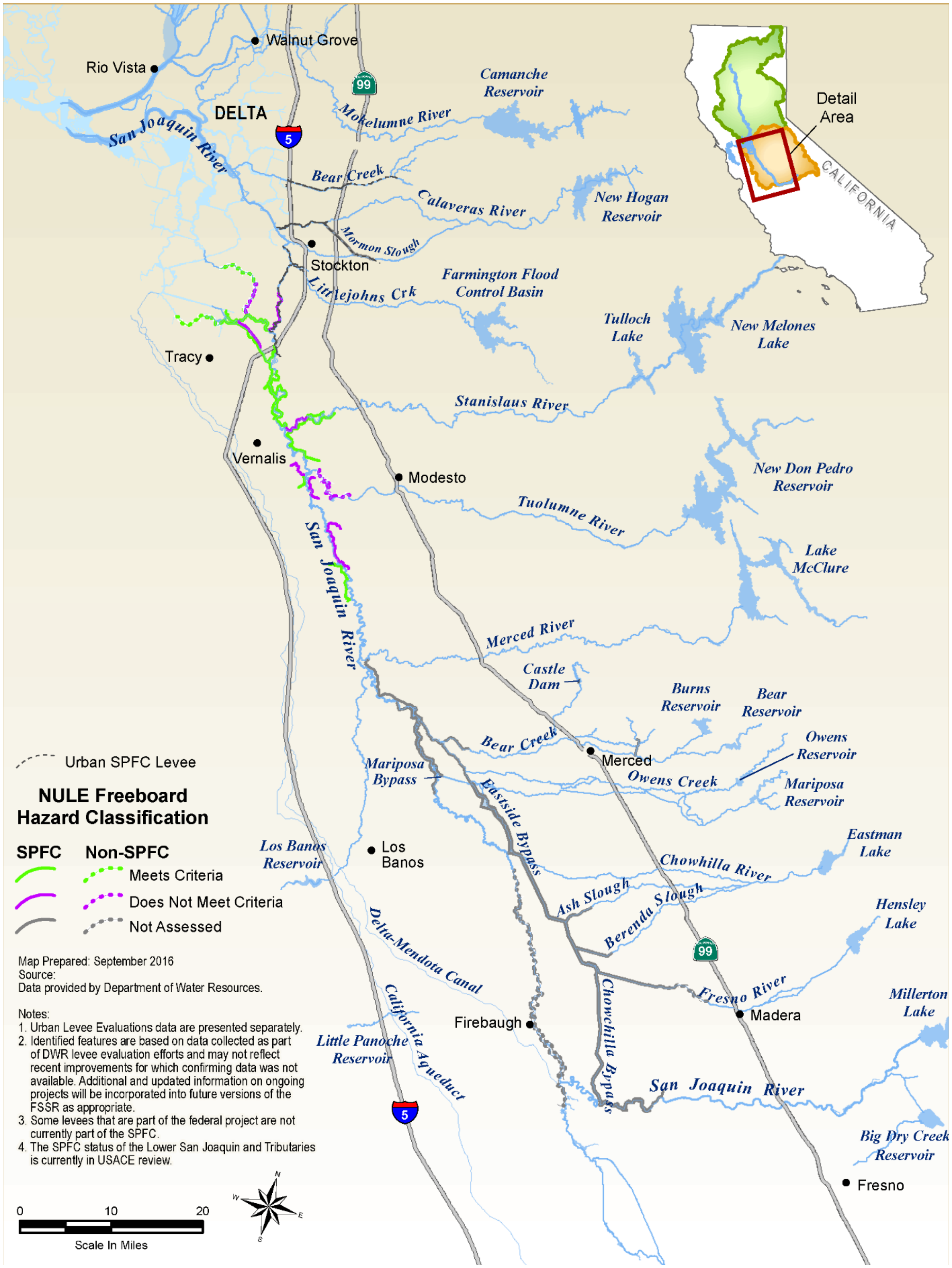
DWR continues to collect levee information using traditional and innovative methods, including LiDAR and bathymetric surveys (see Section A-1).



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

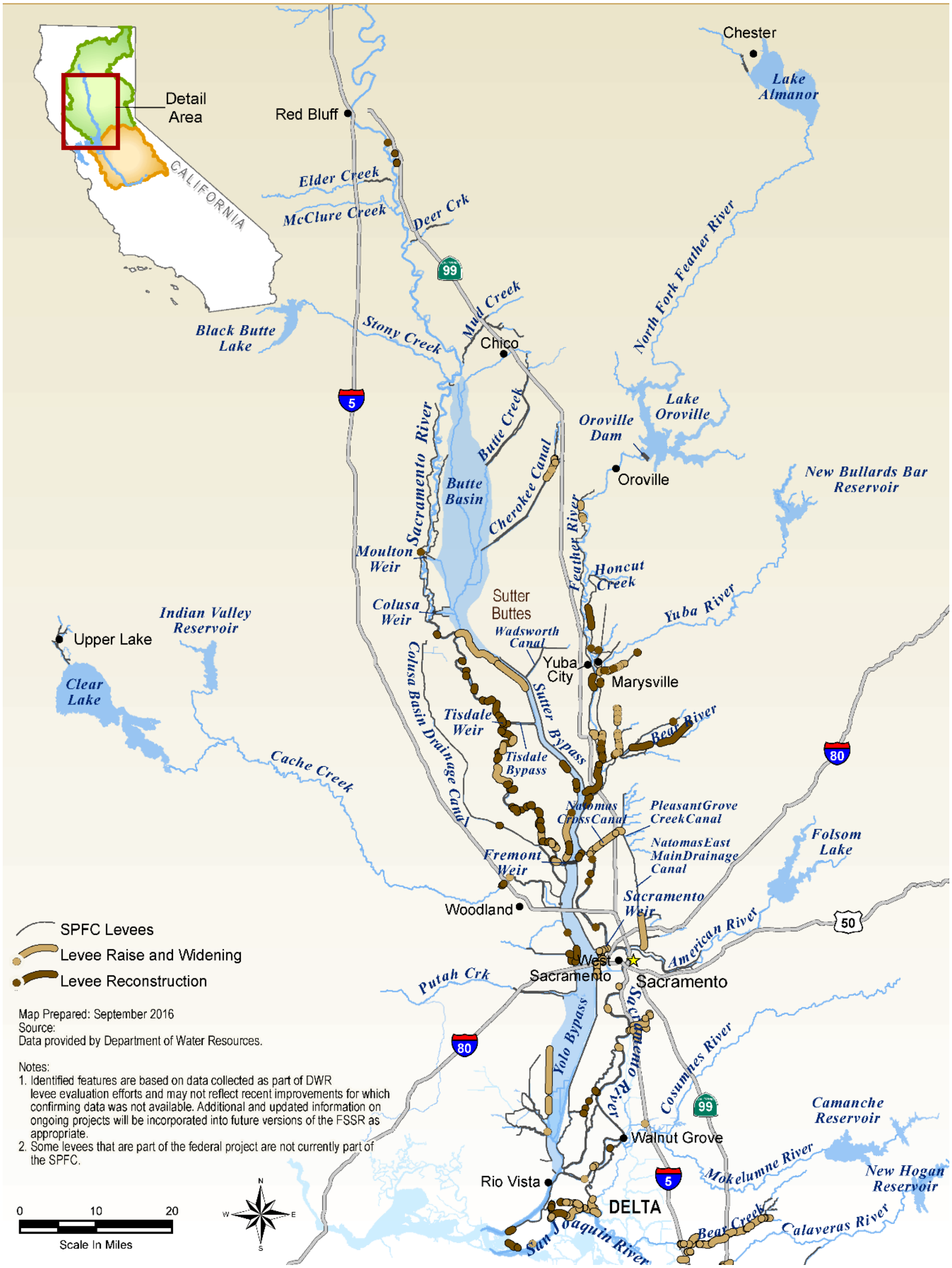
Figure A-7. NULE Freeboard Check Results in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Urban Levee Evaluations data are presented separately.
2. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
3. Some levees that are part of the federal project are not currently part of the SPFC.
4. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

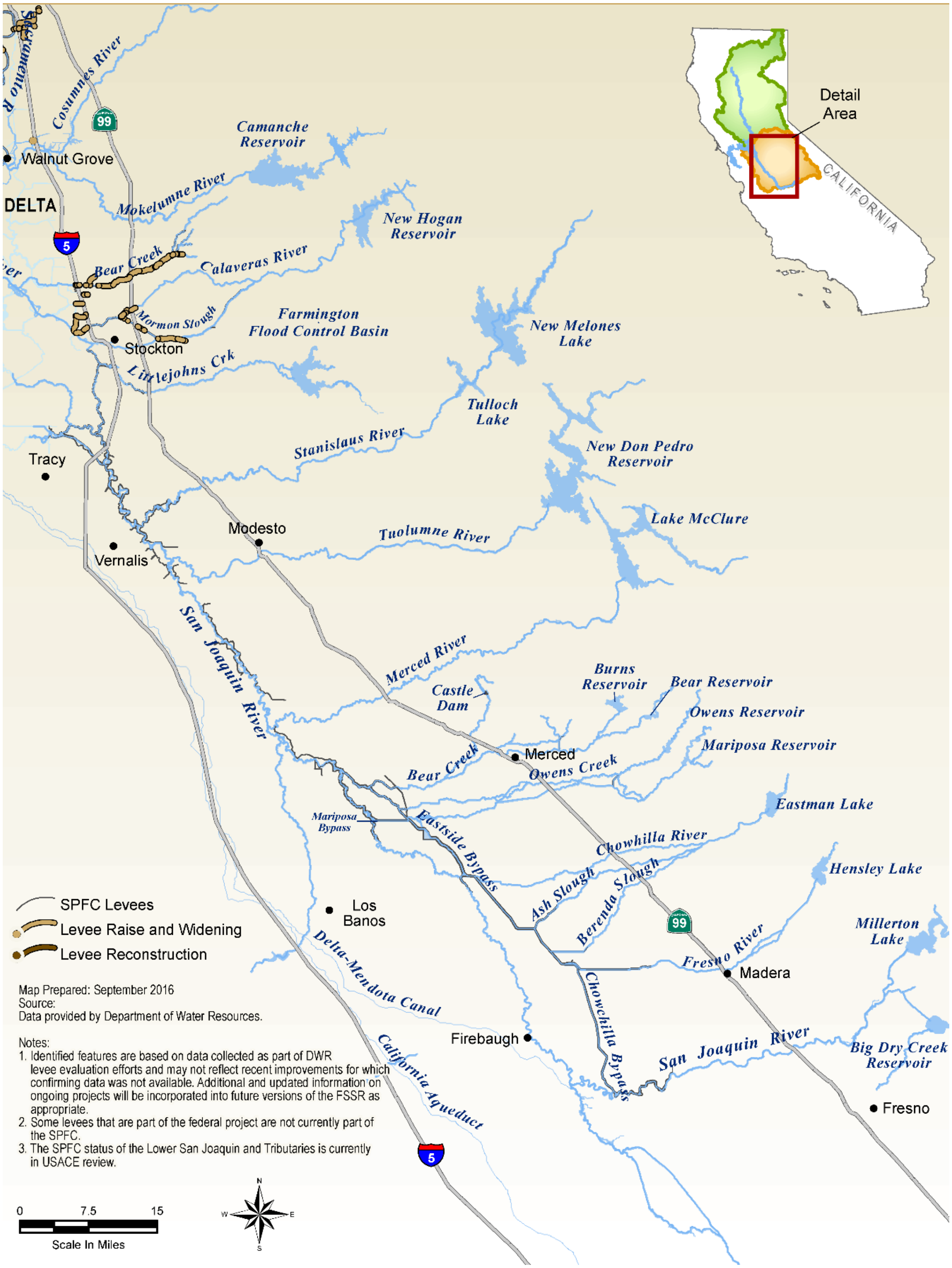
Figure A-8. NULE Freeboard Check Results in the San Joaquin River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
2. Some levees that are part of the federal project are not currently part of the SPFC.

Figure A-9. Levee Raises, Levee Widenings, and Levee Reconstructions in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
2. Some levees that are part of the federal project are not currently part of the SPFC.
3. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-10. Levee Raises, Levee Widenings, and Levee Reconstructions in the San Joaquin River Watershed

A.3 Seepage

This section includes DWR annual inspection results for seepage, and locations of historical seepage occurrences documented by ULE and NULE. Recent, current, and ongoing remedial actions/improvements including locations of seepage remediation projects documented by ULE and NULE, and seepage-related levee reconstructions and improvements planned and conducted by DWR, are described. A description of ongoing actions to improve future evaluations is also included.

A.3.1 Results of Inspections

DWR visually inspects SPFC levees for seepage/sand boils at least twice a year, and reports results annually. Table A-3 shows the DWR inspection rating descriptions for seepage/sand boils on earthen levees.

Table A-3. Levee Inspection Rating Descriptions for Seepage/Sand Boils on Earthen Levees

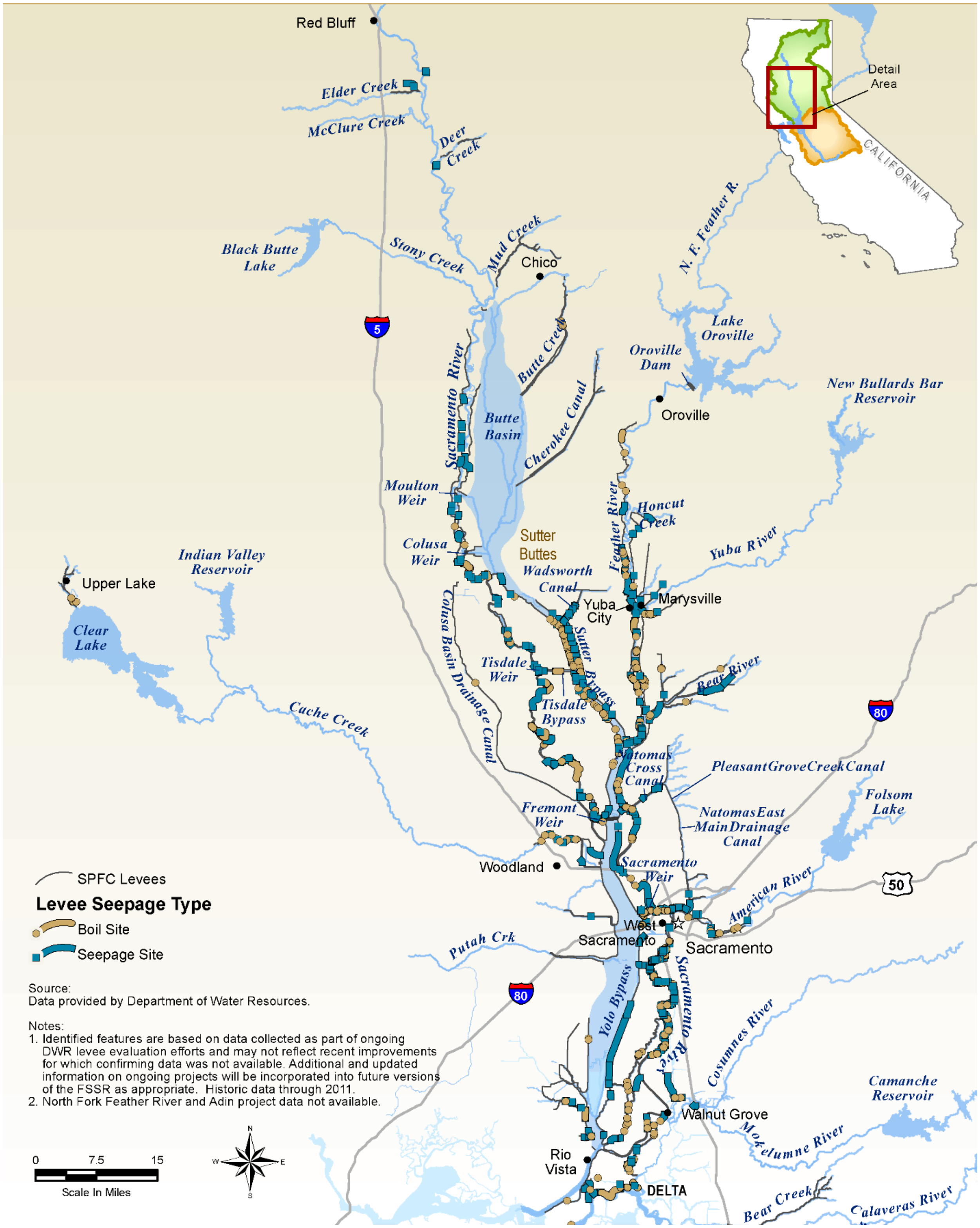
Inspection Rating	Rating Descriptions
Acceptable (A)	No evidence of unrepaired seepage, continuous saturated areas, or sandboils was observed at the time of the inspection.
Unacceptable (U)	Evidence of unrepaired seepage, continuous saturated areas, and/or and boils were observed. Records indicate that unrepaired seepage or sandboils exist.

The biannual inspections that DWR conducts are performed during the spring and fall of each year, and do not necessarily coincide with the flood season. Therefore, routine DWR inspections are less likely to reveal instances of seepage because inspections are usually performed when water is below the toe of levees. Furthermore, the extent of seepage and whether the seepage condition is in a steady or changing state are difficult to determine from visual inspections. Limited knowledge of subsurface conditions also makes it difficult to identify seepage problems.

Because the last five years have been dry and there were so few instances of high water, no occurrences of seepage/sand boils were observed or documented in the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015).

A.3.2 Historical Seepage Occurrences

ULE and NULE collected and cataloged historical occurrences of levee seepage and completed or planned repairs or improvements. Figures A-11 and A-12 show historical seepage occurrences collected by ULE and NULE in the Sacramento and San Joaquin river watersheds, respectively. In the Sacramento River watershed, historical seepage occurrences were located throughout the system and were particularly prevalent along the Sutter Bypass and Sacramento River south of Sacramento. In the San Joaquin River watershed, most historical seepage occurrences were along the San Joaquin River and Eastside Bypass.



SPFC Levees

Levee Seepage Type

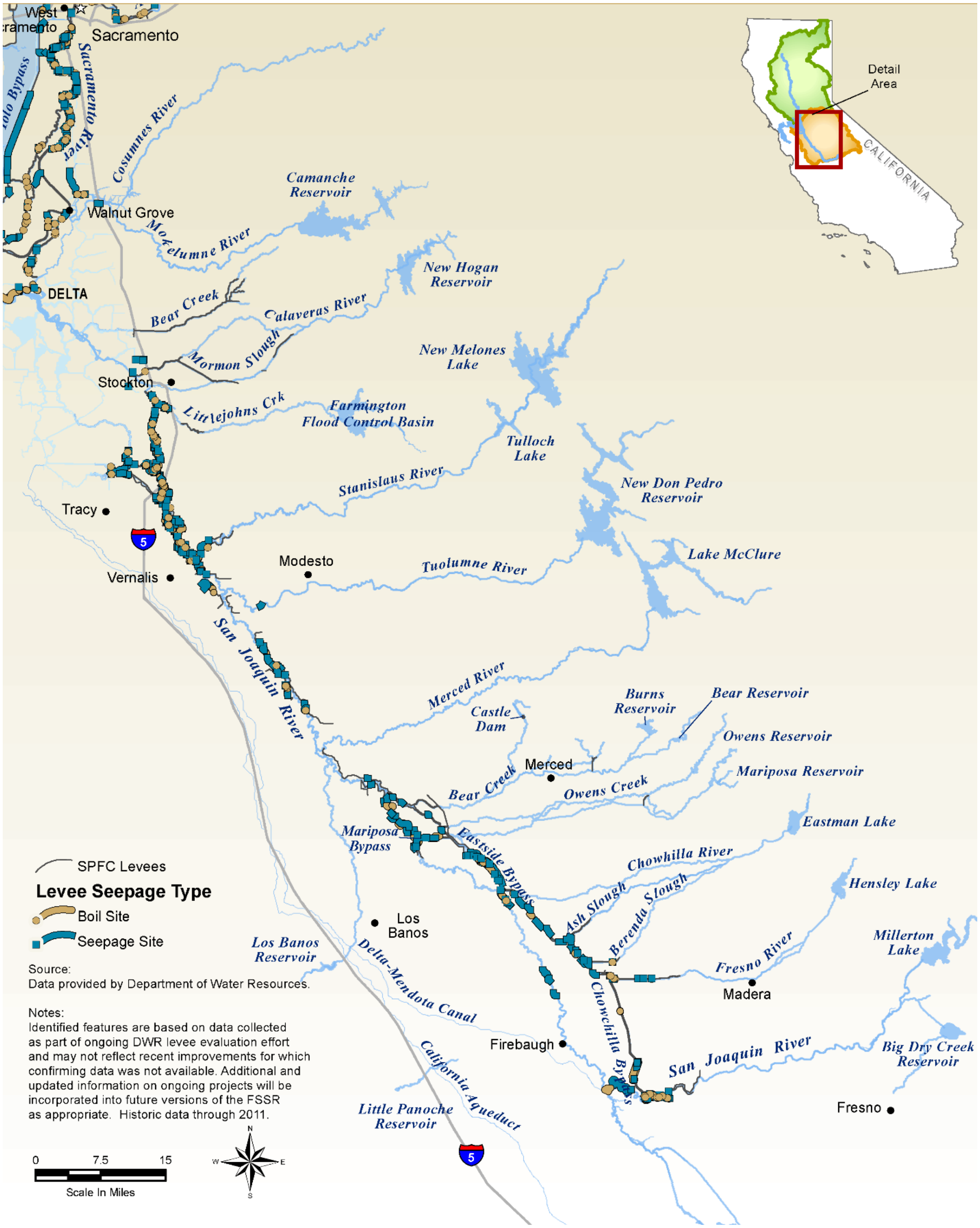
Boil Site

Seepage Site

Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

Figure A-11. Historical Seepage Occurrences in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-12. Historical Seepage Occurrences in the San Joaquin River Watershed

A.3.3 Summary of Recent Remedial Actions

Seepage remediation projects have been constructed throughout the Sacramento and San Joaquin river watersheds to address identified critical seepage problems. ULE and NULE collected and cataloged data about the locations of a range of seepage remediation actions. Figures A-13 and A-14 show seepage remediation efforts on the Sacramento River and San Joaquin River systems, respectively. Seepage remediation has occurred throughout the Sacramento River watershed and is particularly concentrated in the Sutter Bypass, on the lower Feather River, on the west side of Natomas, in the American River, in the Sacramento River south of Sacramento, and in the Yolo Bypass near Woodland. In the San Joaquin River watershed, seepage remediation is most concentrated on the lower San Joaquin River north of Stanislaus River and the upper San Joaquin River near the Chowchilla Bypass.

A.3.4 Summary of Ongoing and Planned Remedial Actions/Improvements

Seepage and boils are identified and monitored by maintaining agencies to initiate floodfighting and levee reconstruction and/or improvements. DWR's Levee Repairs Program is described below, and many of the Early Implementation Program and USACE/Board projects identified in Section A-1 will preserve and enhance the integrity of SPFC levees with regard to seepage.

A.3.5 DWR Levee Repairs Program

Under DWR's Nonurban Flood Risk Management Program, DWR's Levee Repairs Program includes two major projects: the Flood System Repair Project (FSRP) and the Sacramento River Bank Protection Project (SRBPP). Additionally, a new levee penetrations rehabilitation project (LPR) will begin under FSRP. The Levee Repairs Program also manages the State's responsibilities to the Federal Public Law 84-99 Emergency Repairs Project (PL 84-99), which repairs minor damages incurred from a significant flood event. In addition, minor repairs under the Small Erosion Repairs Program are also identified and included in this section.

Flood System Repair Project

FSRP was identified in the 2012 CVFPP as a near-term priority action and DWR developed FSRP to assist maintaining agencies reduce flood risks in nonurban areas. Through FSRP, DWR will provide maintaining agencies with technical and financial support to repair documented critical problems of the SPFC in nonurban areas. Project guidelines typically establish a 15 percent local cost-share toward project costs.

FSRP has established foundational data and project guidelines that support implementation of specific flood risk reduction site repairs. Starting with an accumulation of available levee performance data from numerous State, federal, and local sources, the FSRP database was verified through field reconnaissance of the Sacramento and San Joaquin river systems. This effort evaluated nearly 8,000 past performance problems, resulting in the identification of 138 critical sites within the rural areas of the SPFC eligible for FSRP repairs. FSRP guidelines have been developed to describe the project, establish cost-share criteria, and provide guidance for development and implementation of needed critical repairs.

Part of FSRP includes the LPR, which is intended to identify and address existing easements, boundaries, encroachments, and penetrations of the SPFC and related system repair needs. This information will also inform the Board and support their permitting and enforcement efforts, along with DWR and LMA maintenance activities throughout the system.

Sacramento River Bank Protection Project

SRBPP repairs Sacramento River levees that are at risk of failure during floods and/or normal flow conditions. Through annual river reconnaissance, erosion sites are identified, evaluated and ranked according to their criticality. The most critical sites are selected for design and construction. SRBPP repairs consist mainly of bank repair and/or setback levee construction. The bank repair sites re-establish the eroding bank or levee slope with soil/riprap revetment, incorporating benches and vegetation as mitigation for lost riparian habitat.

USACE is the lead agency responsible for both berm and levee erosion repairs. The Board is the non-federal project sponsor. DWR, acting on behalf of the Board as a 35 percent cost-share partner, is responsible for lands, easements, relocations, right-of-way, and disposal areas. Additionally, DWR performs complete scoping, planning, modeling, design, contracting, and plant maintenance monitoring for selected repair sites. Since 2006, SRBPP has completed critical repairs to 77 sites on the Sacramento River and its tributaries. This includes all 57 emergency critical sites identified in the 2006 Governor's Emergency Declaration. Of the 77 Sacrament Bank Sites, DWR directly completed 34 of the critical repairs.

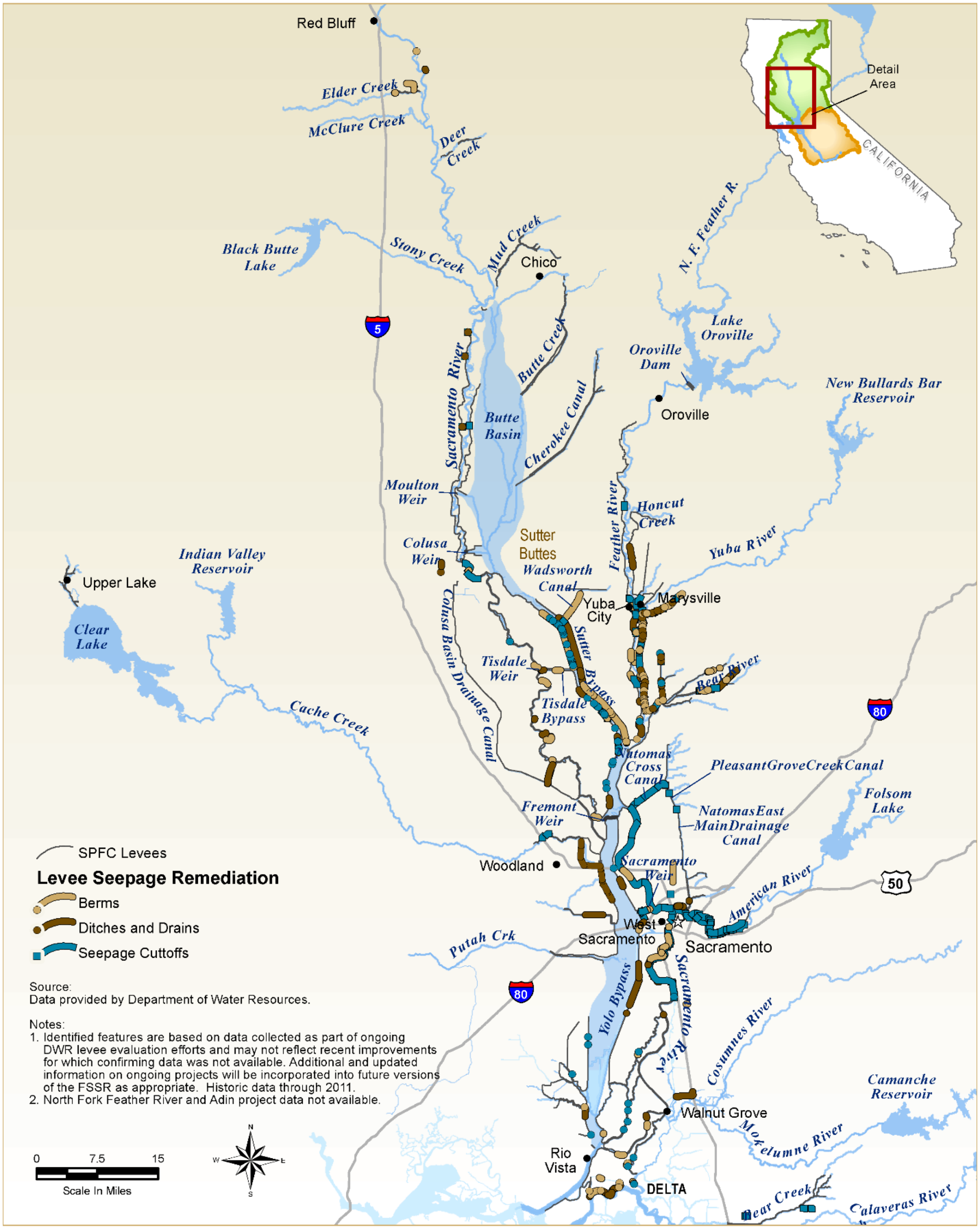
Federal Public Law 84-99 Emergency Repairs Project

The Levee Repairs Program also manages the State's responsibilities to PL 84-99, which funds repairs from minor damages incurred during a significant flood event. Between USACE and DWR, PL 84-99 has funded the repair of nearly 200 sites on the Sacramento and San Joaquin river systems since 2006, at a cost of approximately $86 million ($41 million in State cost). PL 84-99 related damages from the 2006 flooding have been repaired; the PL 84-99 project is not currently involved in any repair activities, pending the next significant flood event.

Small Erosion Repair Program

The Small Erosion Repair Program is a streamlined regulatory permitting and authorization process to facilitate the repair of small erosion sites and provide environmental benefits where feasible. Each site can be a maximum of 0.5 acres and 1,000 linear feet. Phase 1 of the Small Erosion Repair Program is a 5-year pilot effort where up to 15 erosion sites can be authorized each year. The program's intent is to repair erosion sites the same year they are identified. Phase 1 covers levees that are maintained by DWR in the Sacramento River Flood Control Project area. Permits and authorizations for Phase 1 were effective as of May 6, 2014 and expire in May 2019.

Recent Small Erosion Repair Program erosion sites are planned for repair under the Flood System Repair Program. Since 2014, thirteen (13) erosion sites have been authorized under Small Erosion Repair Program; however, only one of the 13 sites has been repaired since April 2016. This site was repaired in 2015 along the Sacramento River near Colusa. Twelve (12) sites still require a California Endangered Species Act incidental take permit (ITP) to cover potential impacts to giant garter snakes (GGS) before they can be constructed. There are additional sites currently being evaluated for authorization under the program. Planned and completed erosion seepage, and stability remediation sites from the Levee Repaiars Program under the FSRP, Sacramento River Bank Protection Program PL 84-99 program, and Small Erosion Repair Project, are shown in Figures A-15 and A-16 for the Sacramento River watershed and San Joaquin River watershed, respectively.

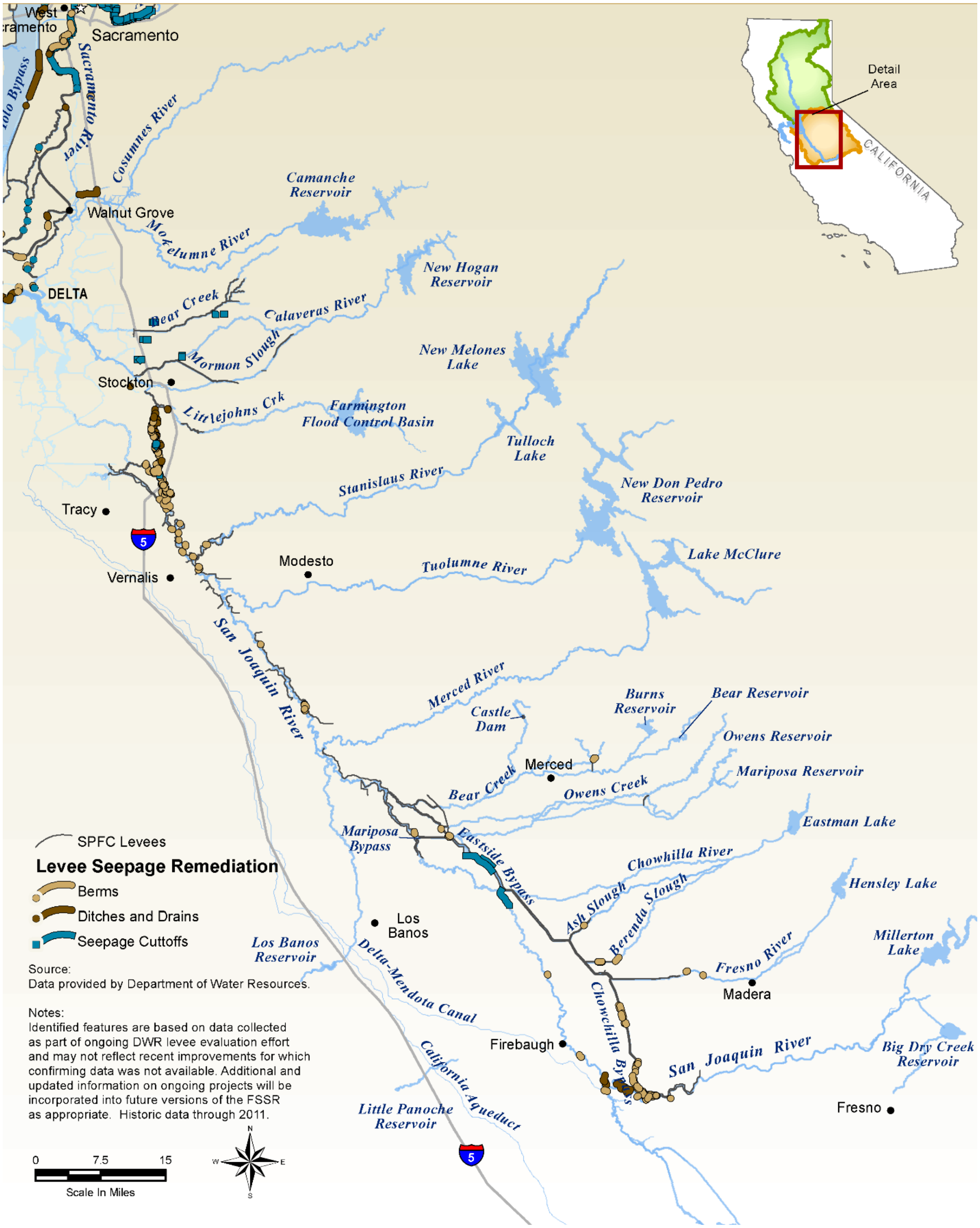


Source:
Data provided by Department of Water Resources.

Notes:

1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

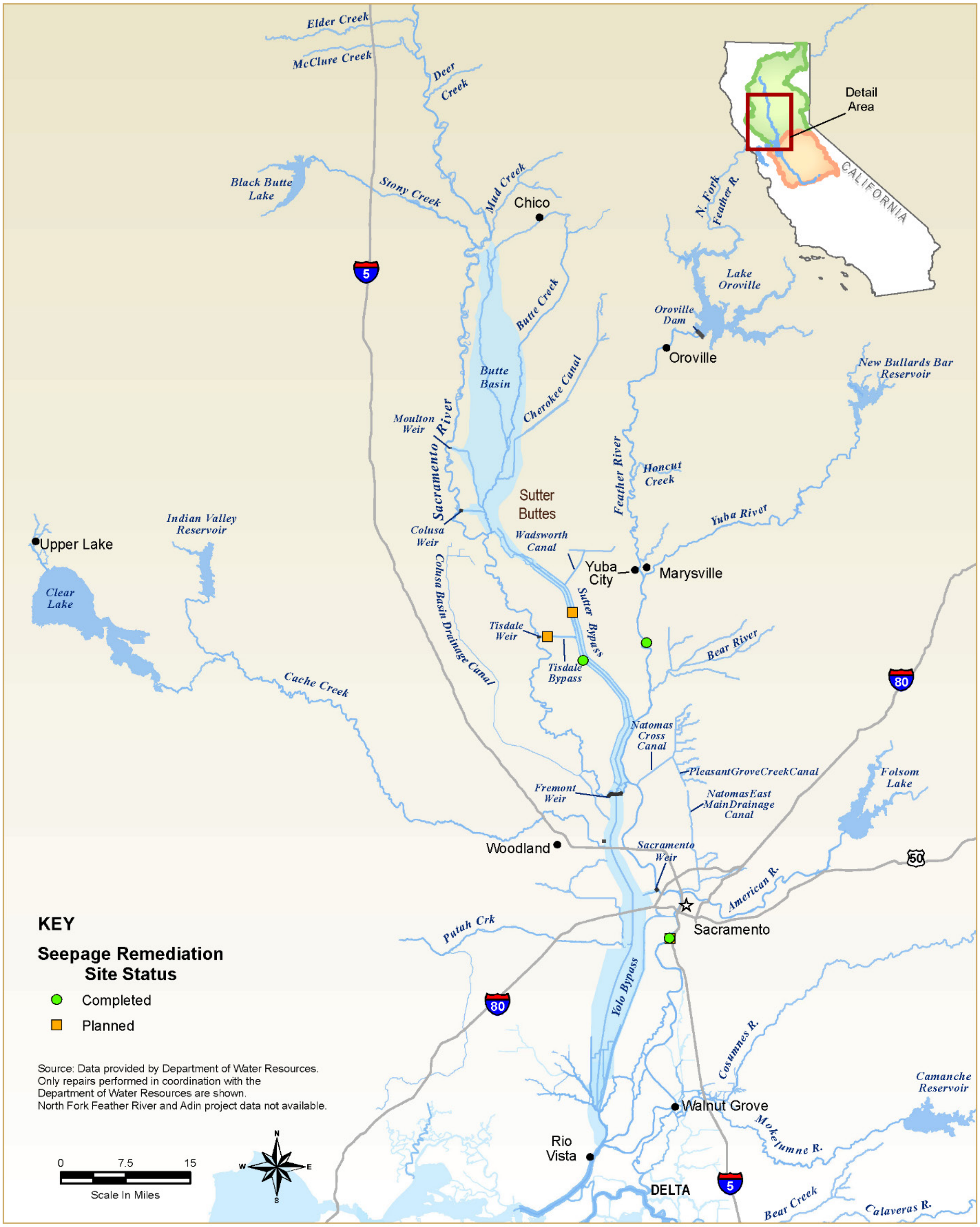
Figure A-13. Seepage Remediation in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

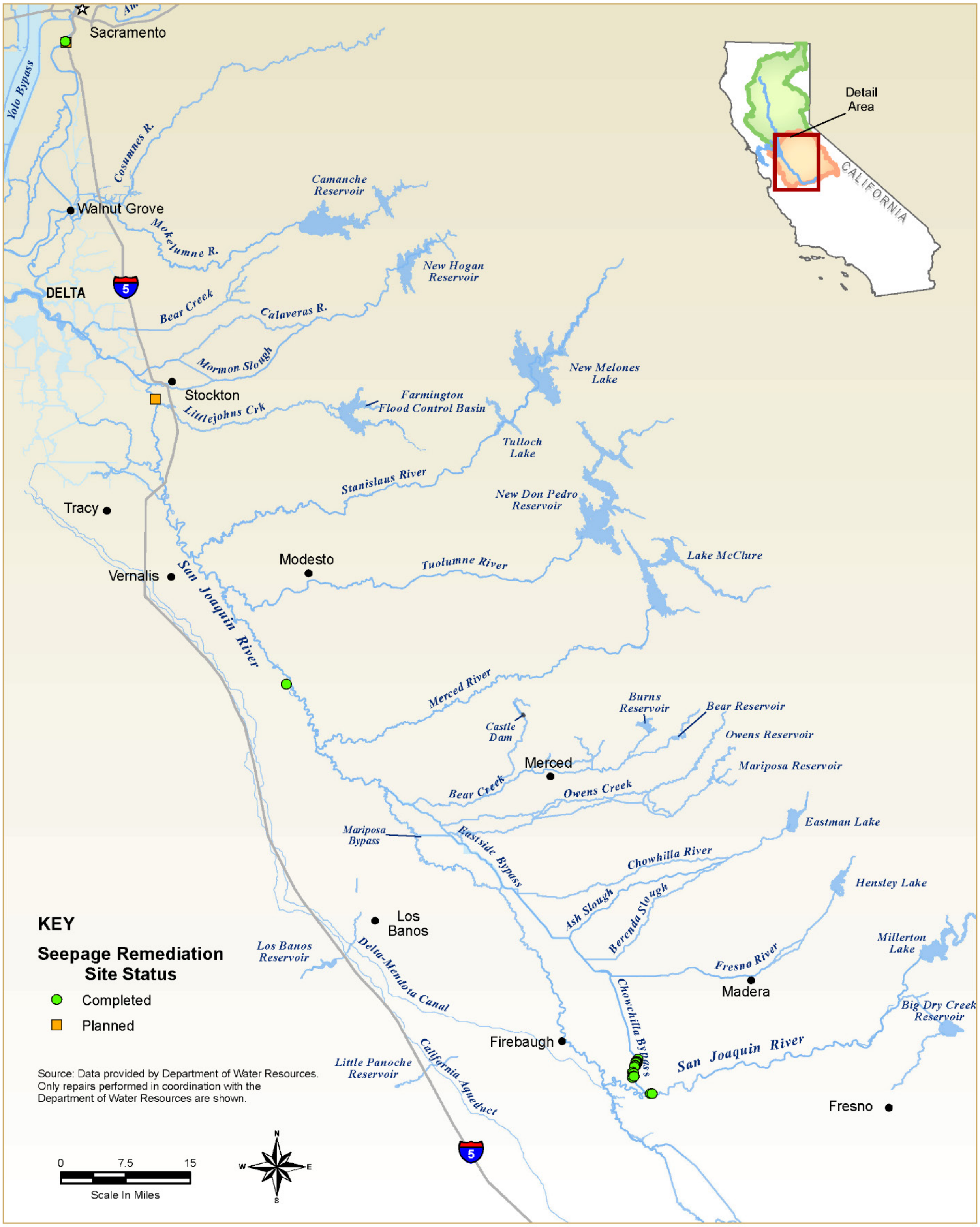
Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-14. Seepage Remediation in the San Joaquin River Watershed



Source: Data provided by Department of Water Resources.
Only repairs performed in coordination with the
Department of Water Resources are shown.
North Fork Feather River and Adin project data not available.

Figure A-15. Planned and Completed Seepage Remediation Sites from DWR Levee Stability Program and Public Law 84-99 Program in the Sacramento River Watershed



Source: Data provided by Department of Water Resources. Only repairs performed in coordination with the Department of Water Resources are shown.

Figure A-16. Planned and Completed Seepage Remediation Sites from DWR Levee Stability Program and Public Law 84-99 Program in the San Joaquin River Watershed

A.3.6 Ongoing Actions to Improve Future Evaluations

DWR continues to collect levee information using traditional and new innovative methods, including the use of electromagnetic surveys. DWR has began a levee monitoring pilot study that would evaluate the effectiveness and usefulness of direct, real-time measurements of seepage rates through and under levees during high water events. The study installedsealed piezometers and river stage gages at preselected critical locations within the Sacramento and San Joaquin river watersheds.

Currently the study has installed a vibrating wire piezometer at 1 site, on the left bank of the Sacramento River several miles downstream of Tisdale Bypass. Installation of the multi-level fully grouted vibrating wire piezometers was conducted in September and October of 2011. The site is laid out in three transects. 63 fully grouted vibrating wire piezometers were installed into 18 borings spread out along the water side toe, waterside slope, waterside hinge, landside hinge, landside slope/berm, and landside toe. Two open standpipe piezometers were also installed for comparison purposes. In addition, two sand packed vibrating wire piezometers were installed for comparison purposes as well. A data logger was installed with a cellular modem so we can download the data from 65 vibrating wire piezometers remotely. This is done on a weekly basis. To date, there has not been a sufficient amount of high water to saturate all of the nested piezometers and provide pore pressures to determine the usefulness of the data.

A.4 Structural Instability

This section includes results of the DWR annual inspections for slope stability and historical levee slope instability occurrences. Recent, ongoing, and planned remedial actions and improvements, and ongoing actions to improve future evaluations for structural instability are also included.

A.5 Results of Inspections

As mentioned, DWR visually inspects SPFC levees at least twice a year, and reports results annually. Information is collected during the inspections on the performance of the levee embankment as it relates to slope stability. Table A-4 shows the DWR inspection rating descriptions for slope stability on earthen levees.

Table A-4. Levee Inspection Rating Descriptions for Slope Stability on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	The slope does not show any separation of soil, any caving, soil movement, or other signs of an unstable slope.
Minimally Acceptable (M)	Either a separation of soil can be seen, caving was observed on the slope or crown, tension cracks due to a slip or slide, or depressions in the slope were observed.
Unacceptable (U)	A crack or depression with a depth greater than 1 inch and a length of 200 feet was observed. A bulge in the slope or at the toe due to upward movement of the soil was observed.

Visual inspections provide limited information on levee conditions related to slope stability. A typical levee inspection occurs from the crown of the levee. Thick vegetation and wide berms can obstruct an inspector's view of slides. Limited knowledge of subsurface conditions also makes it difficult to identify some slope stability problems.

Slope stability levee inspection ratings from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015) are shown on Figures A-17 and A-18 The Sacramento River watershed has seven Unacceptable sites and 37 Minimally Acceptable sites. In the San Joaquin River, four sites were identified as Unacceptable and 45 sites were identified as Minimally Acceptable.

A.5.1 Historical Levee Slope Instability Occurrences

ULE and NULE collected and cataloged information about historical occurrences of levee slope instability. Figures A-19 and A-20 show historical slope instability occurrences collected from ULE and NULE for the Sacramento and San Joaquin river watersheds, respectively. In the Sacramento River watershed, historical levee slope instability occurrences were located most frequently in the lower Sacramento River watershed south of the Fremont Weir. Slope instability was most prevalent on the Sacramento River south of Sacramento and in the north Delta. In the San Joaquin River watershed, historical levee slope instability occurrences were prevalent through the watershed.

A.5.2 Summary of Recent Remedial Actions

Stability berms, revetment, and riprap have been installed through DWR's Levee Repairs Program after slope instability was reported. Problems were generally identified from inspections or as part of levee reconstruction projects that restore levees to current design criteria. Revetments and riprap sites for the Sacramento and San Joaquin river watersheds are shown in Section A-5.

A.5.3 Summary of Ongoing and Planned Remedial Actions/Improvements

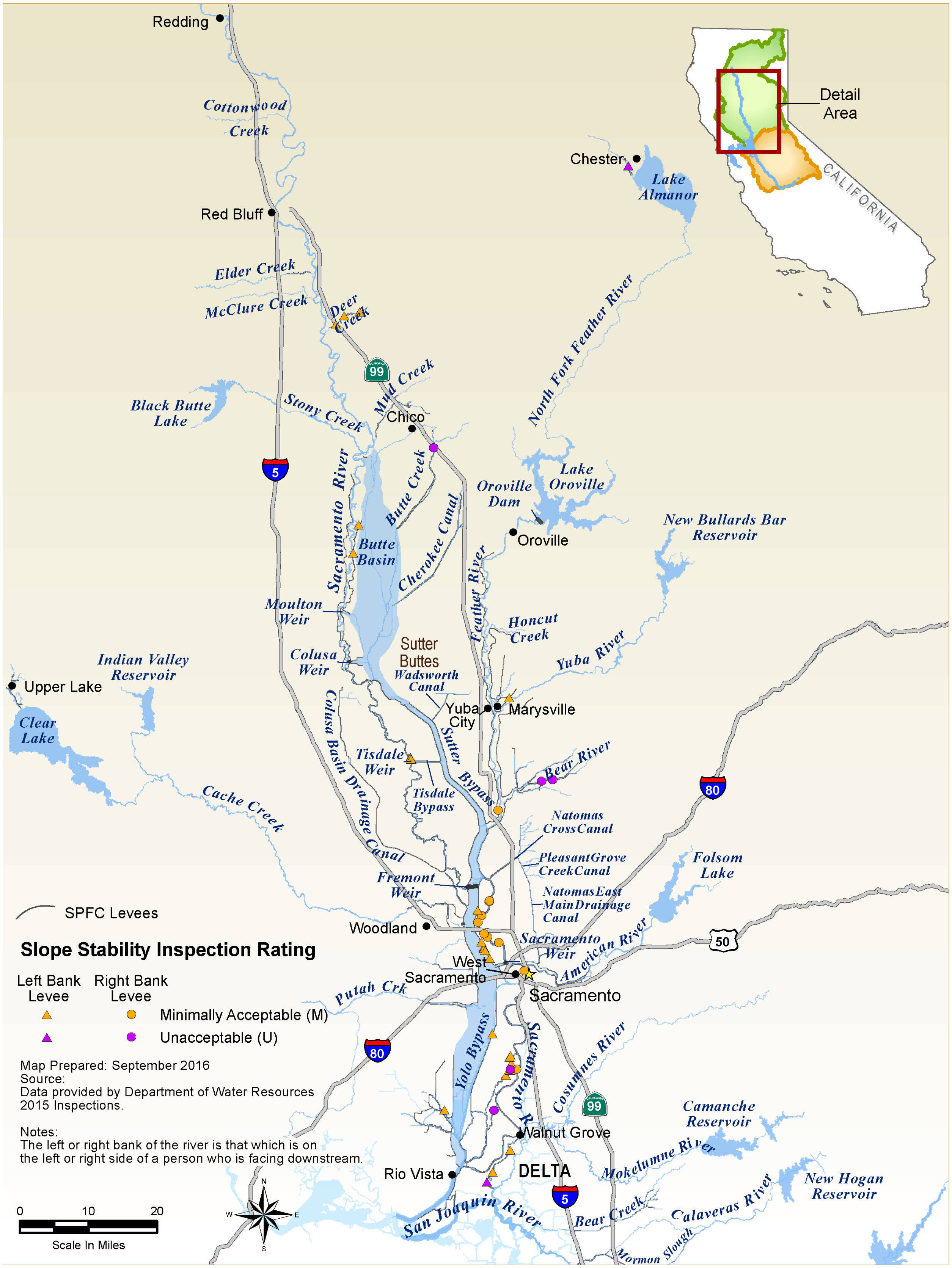
Many slope stability problems are the result of inadequate levee geometry, erosion, or seepage problems. Several of the Early Implementation Program and USACE/Board projects shown in Section A-1 include levee improvements that address levee structural instability. DWR's Levee Repairs Program, described in Section A-2, also addresses structural instability.

A.5.4 Ongoing Actions to Improve Future Evaluations

DWR continues to collect levee information using traditional and new, innovative methods, including LiDAR, surficial geomorphic mapping, and electromagnetic surveys.

A.6 Erosion

This section includes results of DWR inspections and surveys for erosion and historical erosion occurrences. Recent, ongoing, and planned remedial actions and improvements, including revetment and riprap locations and erosion-related levee work planned and conducted by DWR are included. Ongoing actions to improve future evaluations for erosion are also included.



Slope Stability Inspection Rating

Left Bank Levee	Right Bank Levee	
▲	●	Minimally Acceptable (M)
▲	●	Unacceptable (U)

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

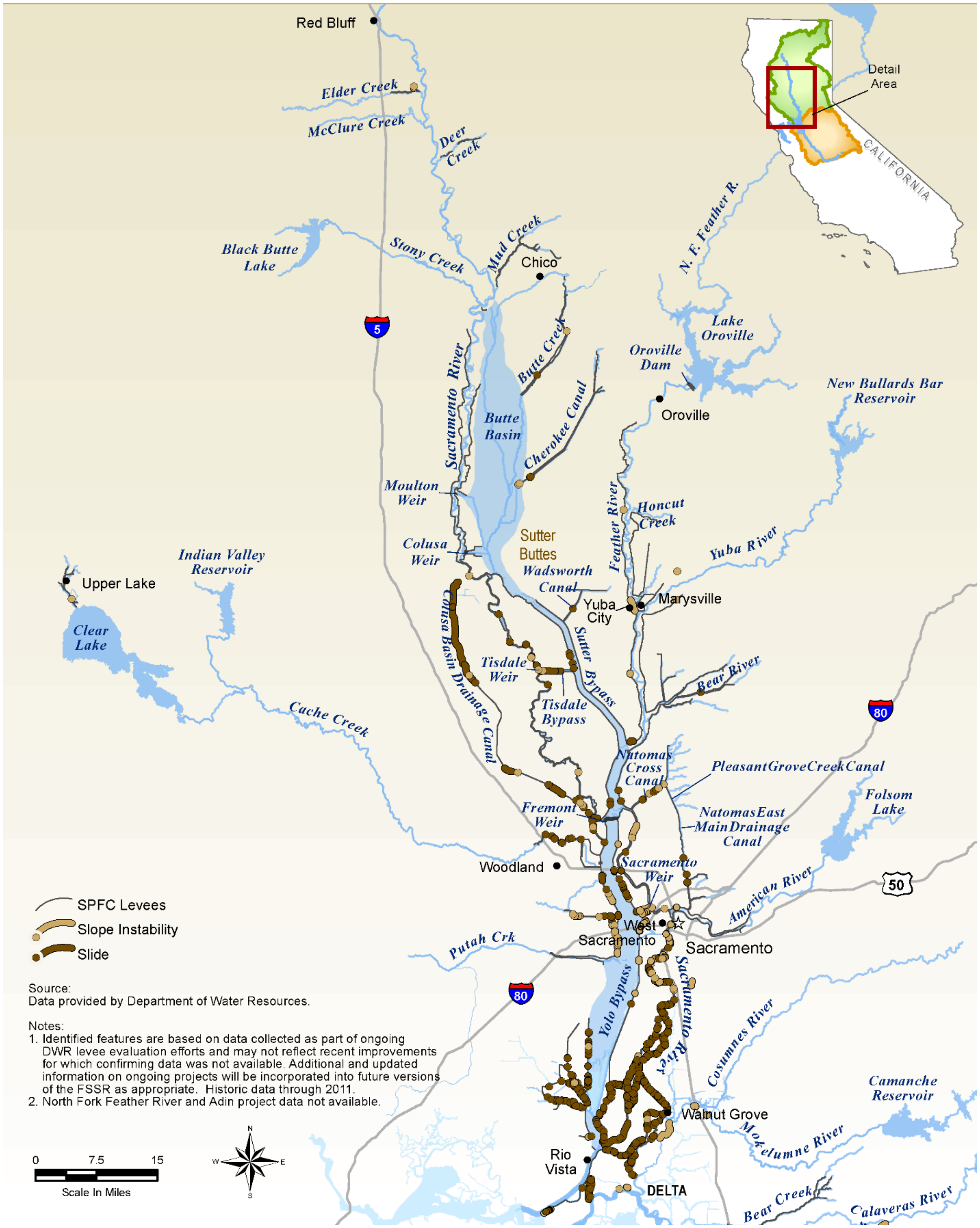
Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.

Figure A-17. 2015 Slope Stability Inspection Ratings in the Sacramento River Watershed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-18. 2015 Slope Stability Inspection Ratings in the San Joaquin River Watershed

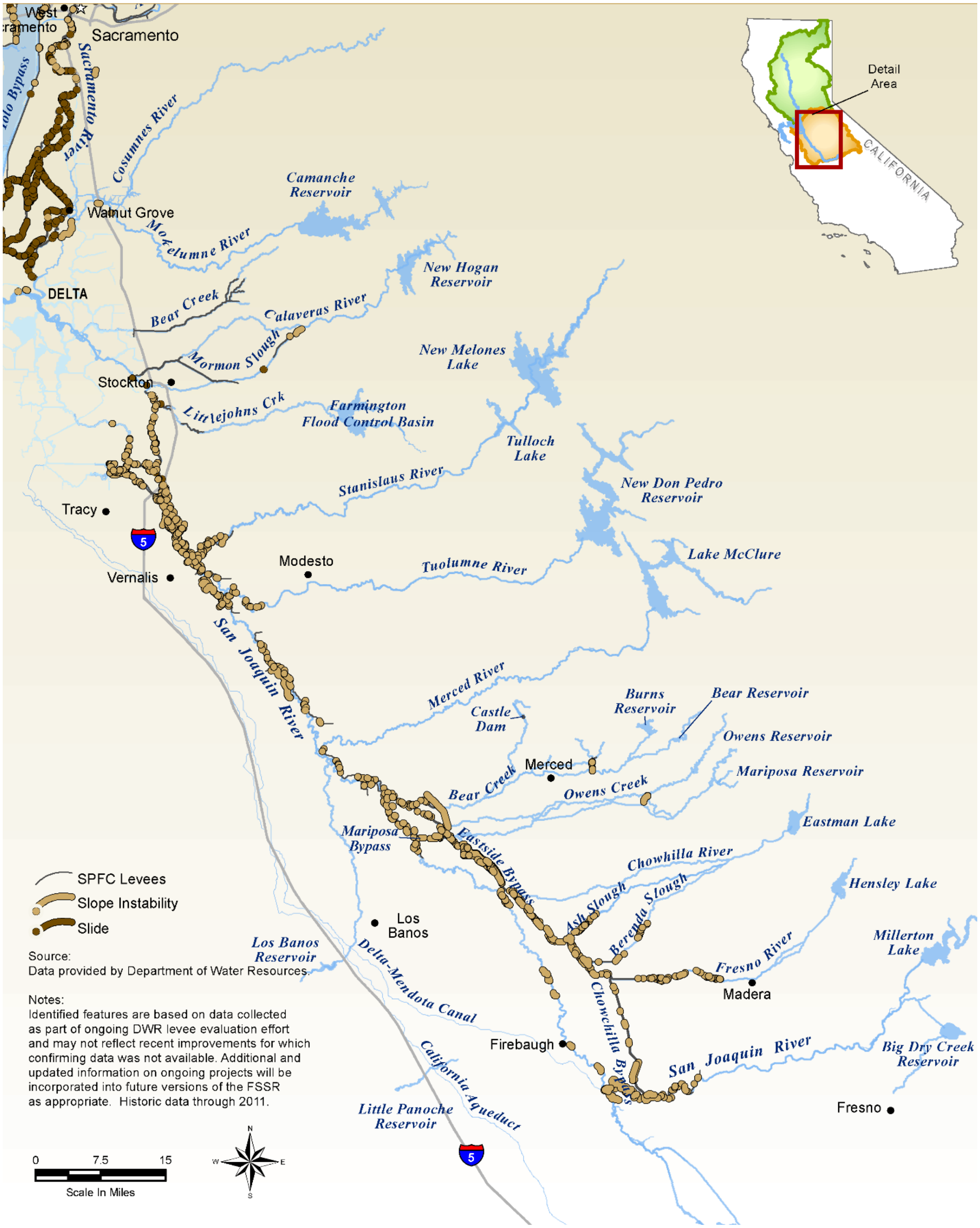


Source:
Data provided by Department of Water Resources.

Notes:

1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

Figure A-19. Historical Slope Instability Occurrences in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-20. Historical Slope Instability Occurrences in the San Joaquin River Watershed

A.6.1 Inspection Results

Sites with erosion problems were identified through the following data sources:

- 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015)
- Draft Sacramento River Bank Protection Project Erosion Surveys (USACE, 2010)

Levee Inspection Reporting

As mentioned, DWR visually inspects SPFC levees for erosion problems at least twice a year, and reports results annually. Table A-5 shows the DWR inspection rating descriptions for erosion/bank caving on earthen levees.

Table A-5. Levee Inspection Rating Descriptions for Erosion/Bank Caving on Earthen Levees

Inspection Rating	Rating Descriptions
Acceptable (A)	No erosion greater than 3 inches in depth was observed in the levee prism or stability berm.
Minimally Acceptable (M)	Erosion with a depth greater than 3 inches but less than 1 foot and less than 3 feet in length was observed in the levee prism or stability berm.
Unacceptable (U)	Erosion with a depth of 1 foot or greater and a length of 3 feet or greater was observed in the levee prism or stability berm or overbuilt section.
Acceptable/Watch/Monitor (A/W)	No erosion greater than 3 inches in depth was observed in the levee prism or stability berm, but the area should be monitored and maintained to avoid a future maintenance issue.

San Joaquin River Flood Control System Waterside Erosion Surveys

In 2006, DWR began an erosion survey program for the San Joaquin River Flood Control System to assist in documenting and monitoring erosion sites. The most recent report, 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System, Appendix L - Supplemental Erosion Survey of the San Joaquin River Flood Control System (DWR, 2015), includes an inventory of levee erosion sites on the San Joaquin River Flood Control System. Surveys are conducted annually, between July and October. Land-based surveys are conducted by inspecting the waterside levee and berm from the levee crown. In navigable waterways where the view of the waterside levee is obstructed, a boat is used to conduct the survey.

Erosion sites were ranked using criteria partly based on the listed in the report 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System, Appendix F – Maintenance Requirements and Responsibilities (DWR, 2015). The criteria have been partially modified to suit the type of data collected for the San Joaquin River system. An overall rating was assigned to each site based on a l weighted score of erosion criteria (berm width, vegetation cover, burrow holes, levee slope, soil type, site relative to bend, radius of curvature, length of erosion, scarp height, and location of erosion). Table A-6 shows the DWR inspection rating descriptions for the surveys.

Table A-6. San Joaquin River Flood Control System Erosion Surveys Rating Descriptions for Erosion/Bank Caving on Earthen Levees

Inspection Rating	Rating Description
Minimally Acceptable (M)	A site that receives a normalized score equal to or less than the average is rated M. The site should be monitored and assessed annually for erosion activity, as it may become a serious inadequacy in the next flood event.
Unacceptable (U)	A site that receives a normalized score greater than the average is rated as U. The site may require corrective action soon, because it may become a serious inadequacy that can fail in the next flood event.

Sacramento River Bank Protection Project Erosion Surveys

SRBPP erosion surveys are described in Section 2.1.3.

DWR Levee Mile Reports incorporate data from all three inspections and present them according to the rating descriptions for erosion/bank caving on earthen levees, as shown in Table A-5. Data from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System are shown on Figures A-21 and A-22. Minimally Acceptable and Unacceptable ratings for erosion are located sporadically throughout the Sacramento River watershed. The north Delta and lower Sacramento River south of Sacramento have a relatively high concentration of erosion sites. Most of the erosion sites in the San Joaquin River watershed are along the lower San Joaquin River north of the Stanislaus River and Mormon Slough.

Limitations of Inspection Results

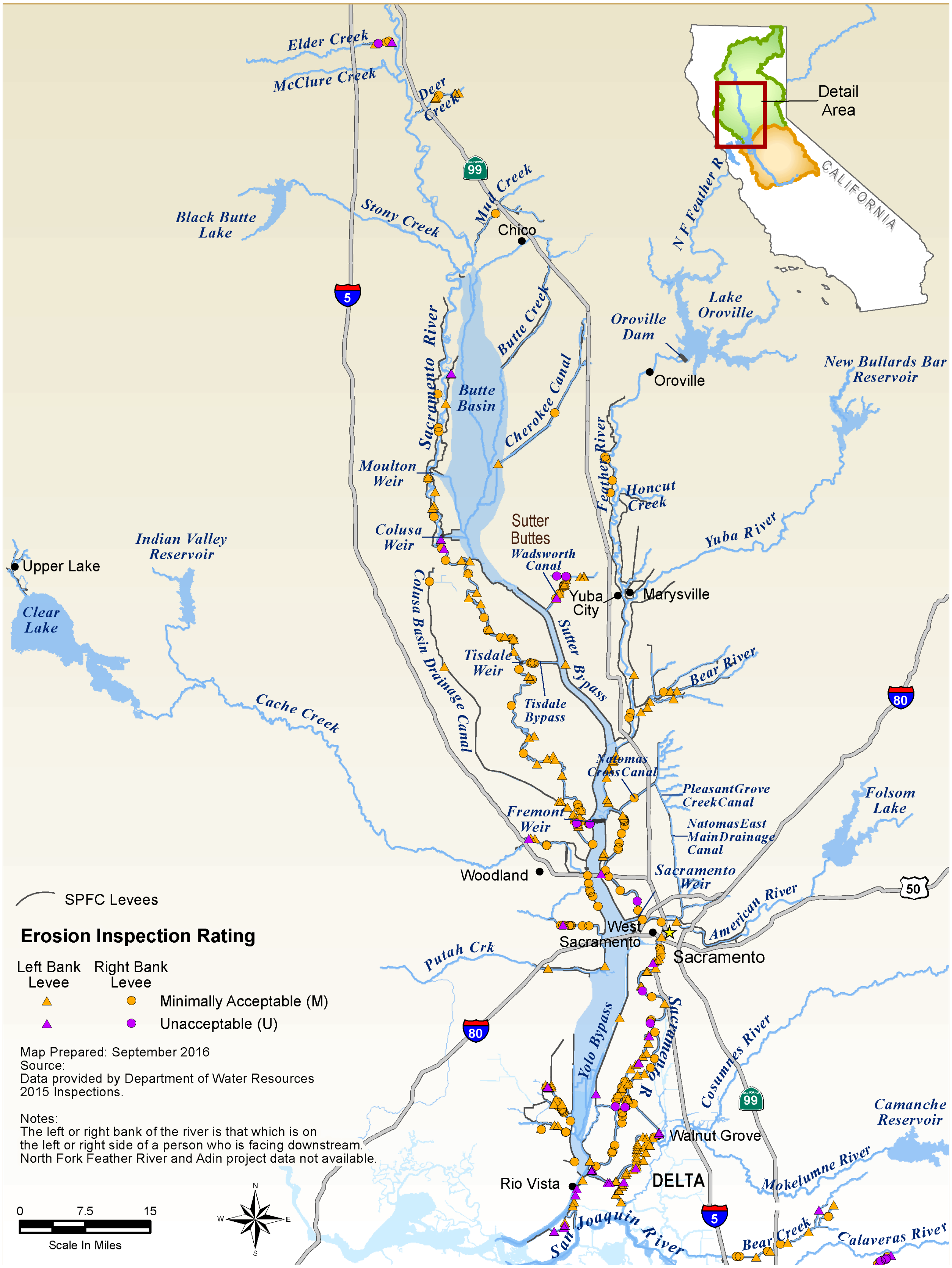
Visual inspections provide limited information on levee conditions related to erosion. A typical levee inspection occurs from the crown of the levee, but erosion on the slope and beyond is sometimes not visible from this vantage point. In addition, thick vegetation and wide berms can also obstruct an inspector’s view of an erosion site. Erosion surveys conducted by boat can improve on these limitations, but both the levee inspections and erosion surveys are limited to what is visible above the waterline from the top of the levee.

A.6.2 Historical Erosion Occurrences

ULE and NULE collected and cataloged information about historical occurrences of levee erosion and completed or planned repairs or improvements. Figures A-23 and A-24 show historical erosion occurrences for the Sacramento and San Joaquin river watersheds, respectively. Historical erosion occurrences were located throughout almost all SPFC levees of the Sacramento and San Joaquin river watersheds.

A.6.3 Summary of Recent Remedial Actions

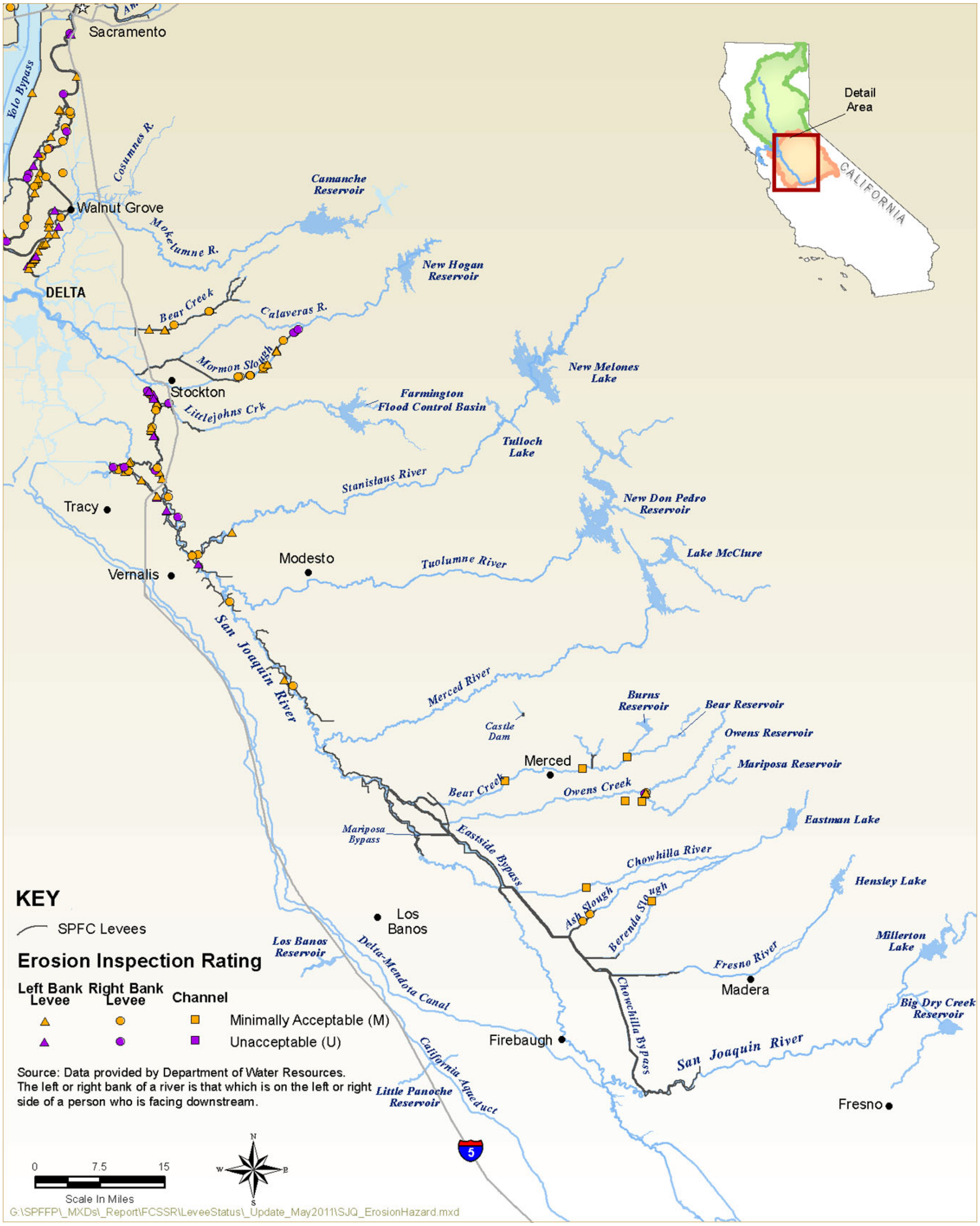
Revetment and riprap have been installed through DWR’s Levee Repairs Program after erosion was reported from inspections to restore levees to meet current design criteria.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

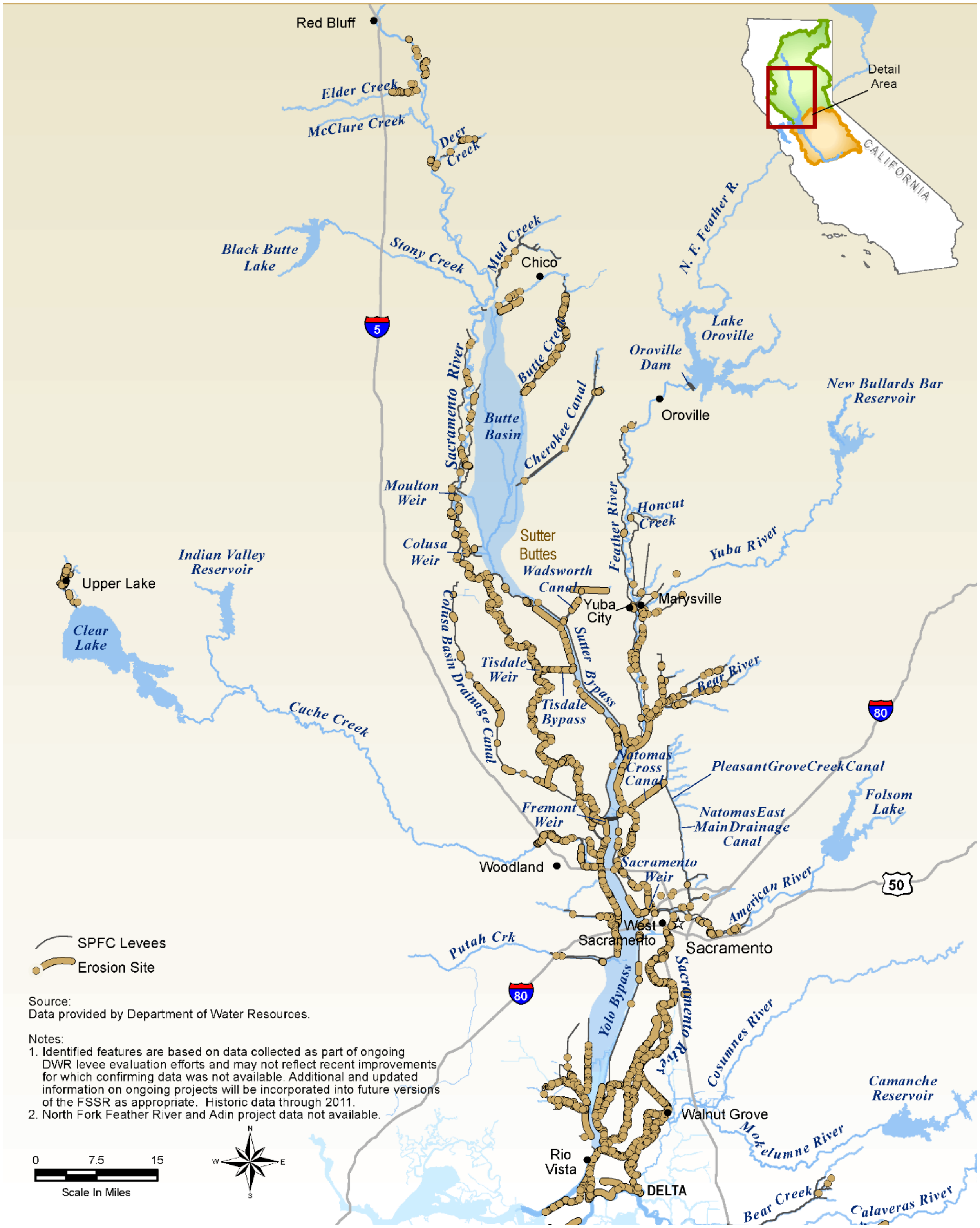
Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
North Fork Feather River and Adin project data not available.

Figure A-21. 2015 Erosion Inspection Ratings in the Sacramento River Watershed



Source: Data provided by Department of Water Resources.
The left or right bank of a river is that which is on the left or right side of a person who is facing downstream.

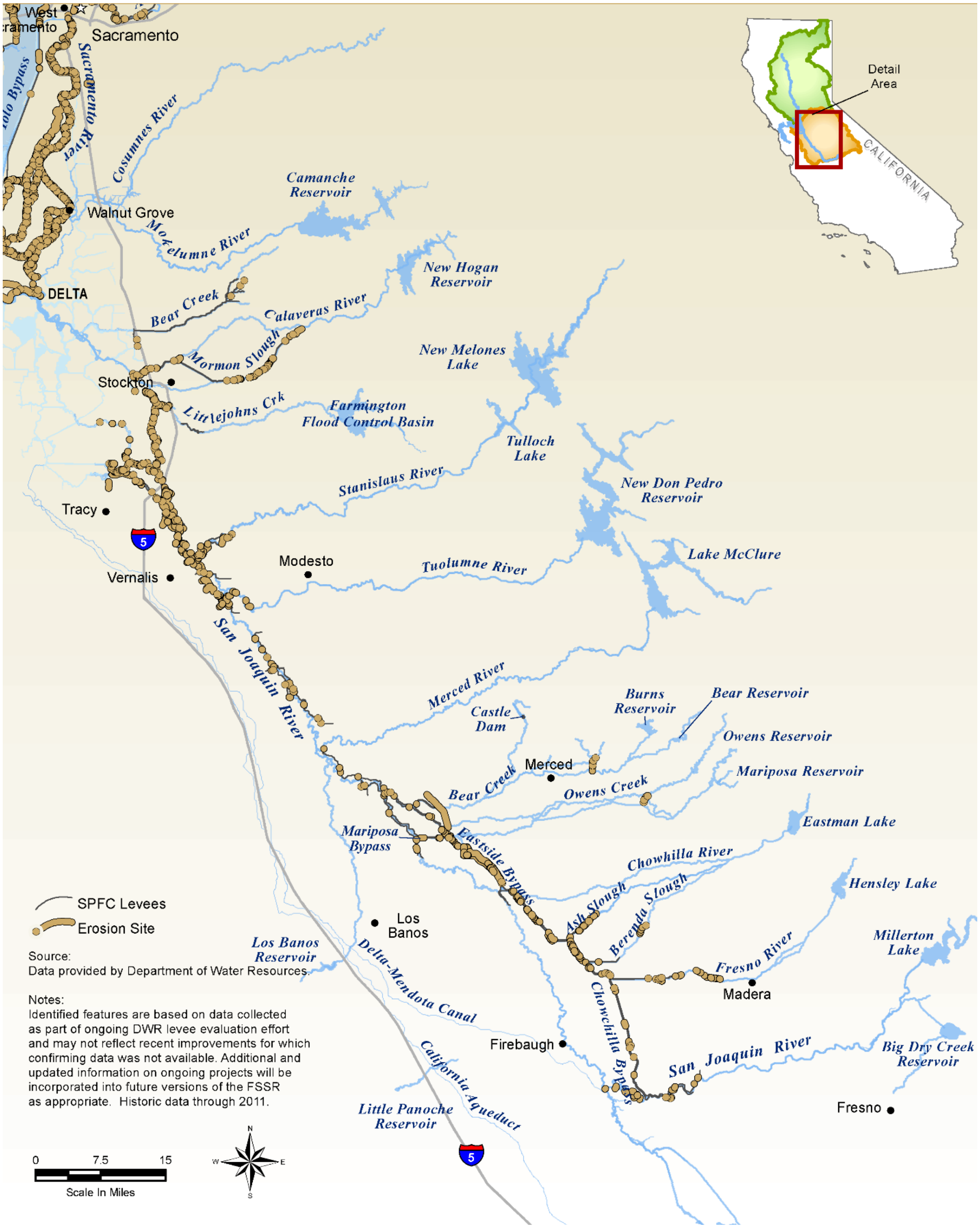
Figure A-22. 2015 Erosion Inspection Ratings in the San Joaquin River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

Figure A-23. Historical Erosion Occurrences in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-24. Historical Erosion Occurrences in the San Joaquin River Watershed

Information about observed revetment and riprap sites was collected and cataloged as part of the data collection efforts for ULE and NULE, as described in this section. Figures A-25 and A-26 show observed revetment and riprap sites for the Sacramento and San Joaquin river watersheds, respectively. Revetment and riprap have been placed throughout the Sacramento and San Joaquin river watersheds.

A.6.4 Summary of Ongoing and Planned Remedial Actions/Improvements

Erosion is identified and monitored by maintaining agencies to help identify locations that require remediation. DWR's Levee Repairs Program is described below, and many of the Early Implementation Program and USACE/Board projects identified in Section A-1 will preserve the integrity of SPFC levees with regard to erosion.

DWR Levee Repairs Program

As mentioned, DWR's Levee Repairs Program addresses critically and not critically damaged levees, leveraging existing programs and authorizations. The following projects/programs address erosion problems:

- Sacramento River Bank Protection Project
- Sacramento-San Joaquin Erosion Repair Project
- Levee Stability Program
- PL 84-99 Rehabilitation Assistance Program

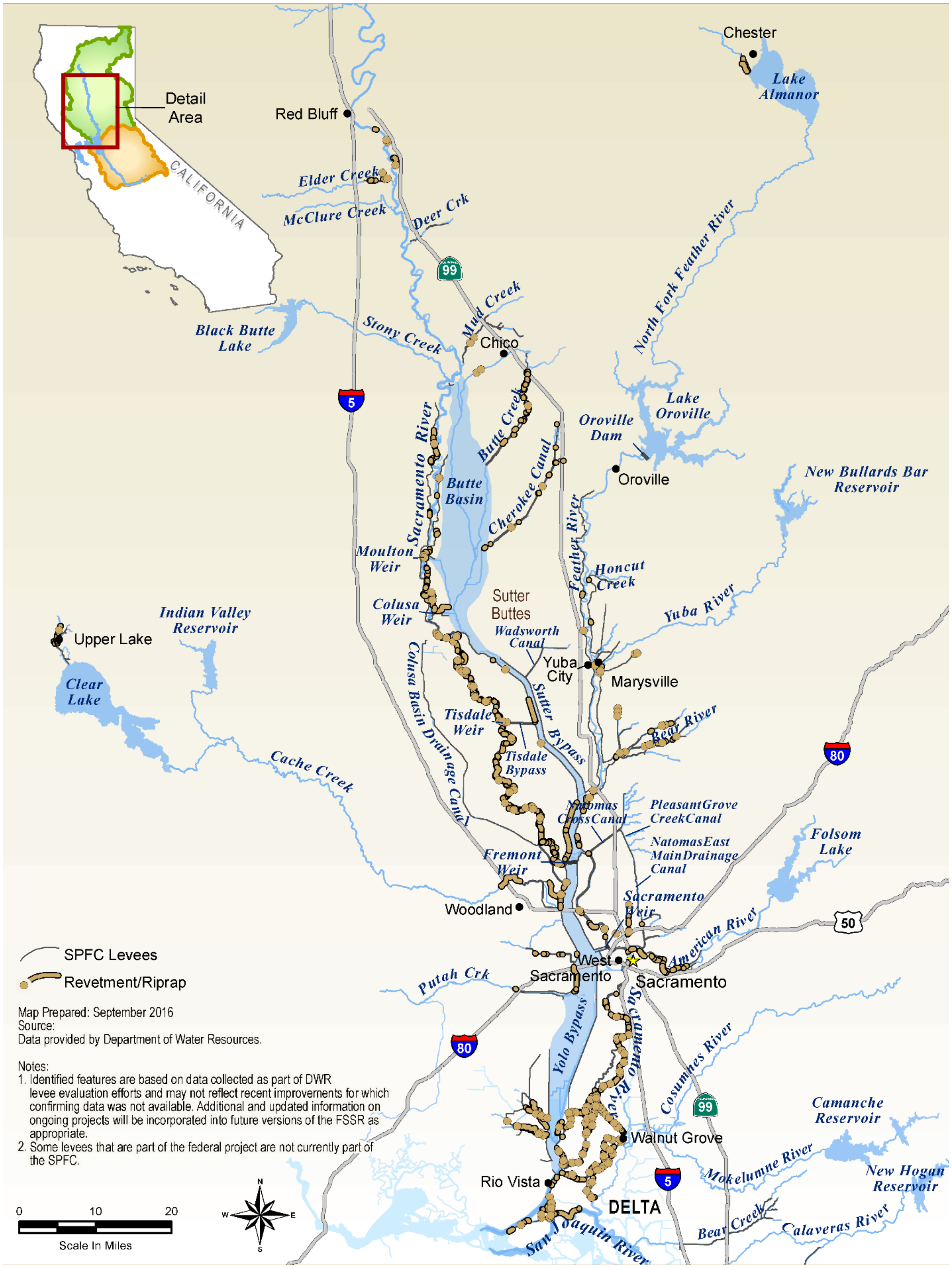
The Sacramento River Bank Protection Project is a federally authorized project with cost sharing between USACE and the Board for SPFC levees that are at risk of an erosion failure during floods and/or normal flow conditions. Waterside erosion surveys of the Sacramento River system conducted every year provide an inventory of erosion sites. As of December 2010, 83 erosion sites had been repaired and 173 were planned for repair (USACE, 2010).

The Sacramento-San Joaquin Erosion Repair Project is funded by DWR and local agencies for remediation of erosion sites across the Central Valley. The Sacramento-San Joaquin Erosion Repair Project will be used to repair erosion sites when the Sacramento River Bank Protection Project authorization ends. As of December 2010, eight erosion sites had been completed and seven were planned for completion.

As mentioned, the Levee Stability Program is a federal program authorized by the Water Resources Development Act of 2007. Levee Stability Program sites are selected by the DWR Levee Evaluations Program. As of June 2016, five erosion sites had been recommended for repair, but additional sites are anticipated as the DWR Levee Evaluations Program continues.

As mentioned, PL 84-99 provides the federal government with authority for emergency management activities. After the 2005-06 storms, USACE determined that 173 erosion sites were eligible for PL 84-99 assistance; all sites have been repaired.

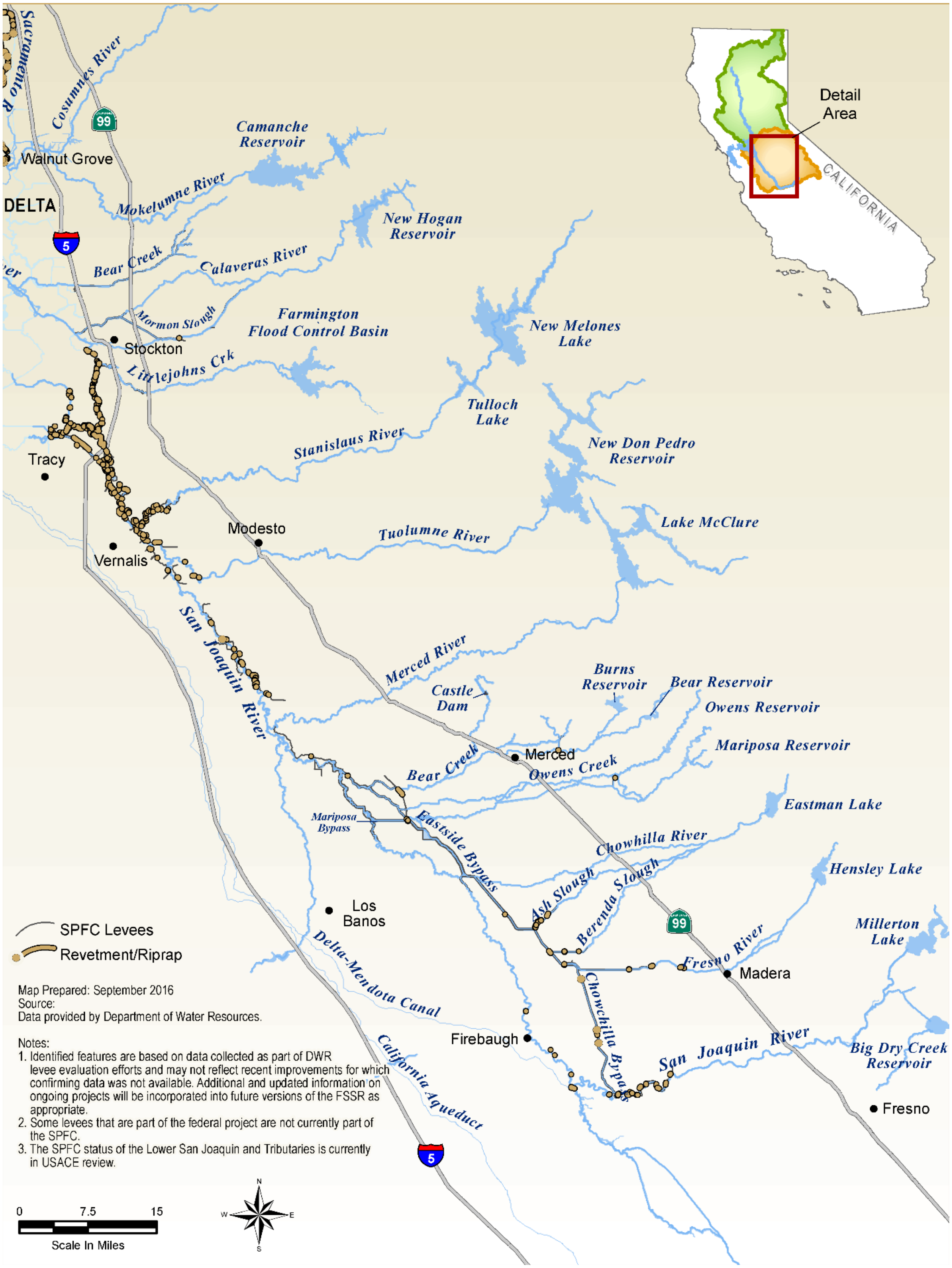
Planned and completed erosion sites from the Sacramento River Bank Protection Project, Sacramento-San Joaquin Erosion Repair Project, the Levee Stability Program, and PL 84-99 projects are shown in Figures A-27 and A-28 for the Sacramento and San Joaquin river watersheds, respectively.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
2. Some levees that are part of the federal project are not currently part of the SPFC.

Figure A-25. Levee Revetment Sites in the Sacramento River Watershed



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate.
2. Some levees that are part of the federal project are not currently part of the SPFC.
3. The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-26. Levee Revetment Sites in the San Joaquin River Watershed

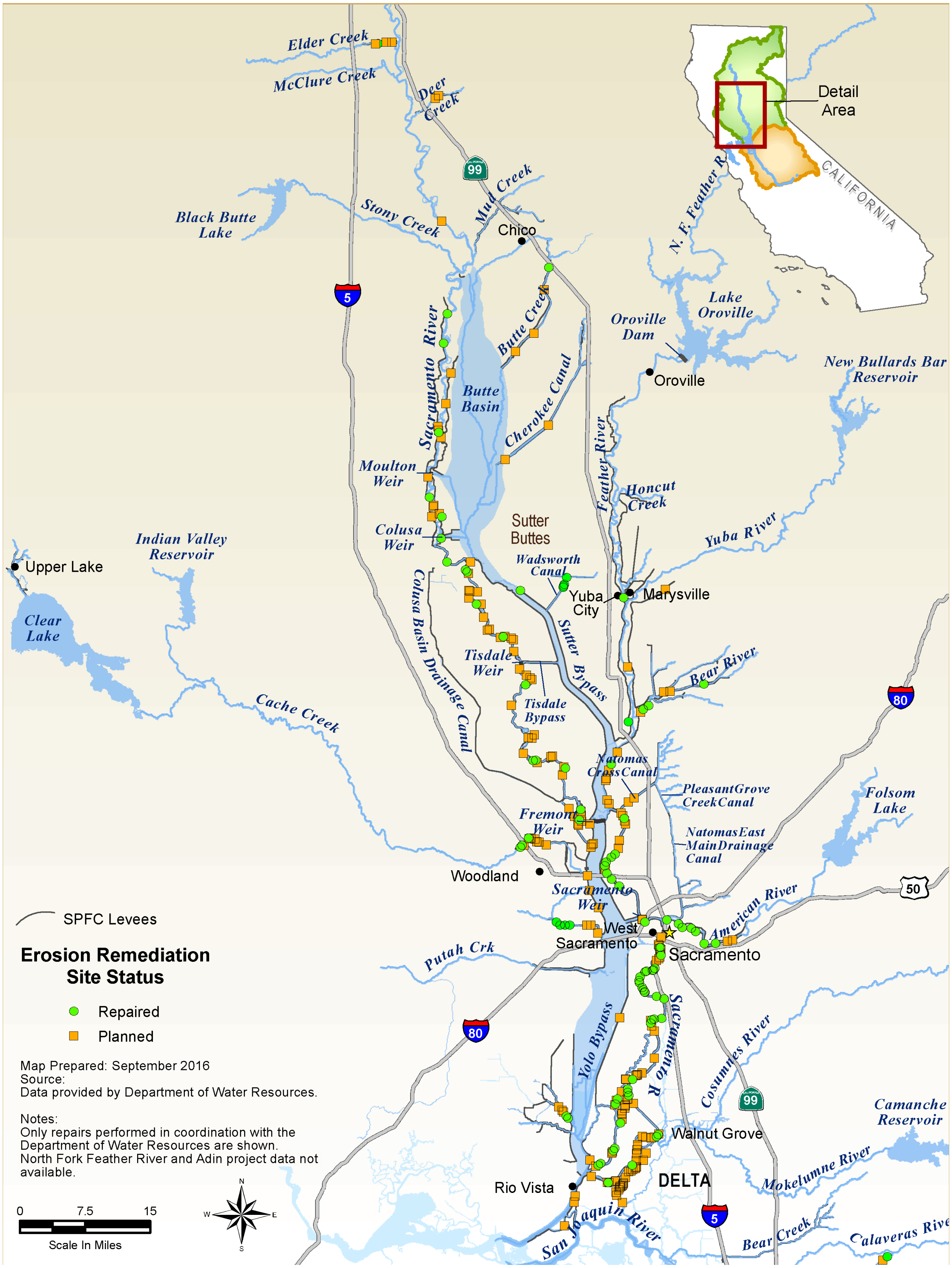


Figure A-27. Planned and Completed Erosion Repair Sites in the Sacramento River Watershed

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources.

Notes:
Only repairs performed in coordination with the Department of Water Resources are shown.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-28. Planned and Completed Erosion Repair Sites in the San Joaquin River Watershed

A.6.5 Ongoing Actions to Improve Future Evaluations

DWR continues to collect levee information using traditional and new, innovative methods, including LiDAR, bathymetric surveys, and geomorphic mapping (see Section A-1). Bathymetric data are especially important in revealing underwater erosion of riverbanks that was previously unknown from waterside erosion surveys.

In addition, a United States Geological Survey (USGS) Sacramento River Bank Protection Project Sedimentation Study is currently underway to evaluate sediment transport and bank stability within the Sacramento River Flood Control System. The study area extends along the Sacramento River from river mile (RM) 46 at Freeport upstream to RM 144 at Colusa. The study consists of two phases. Phase 1 was completed in March 2009 and included collection and review of available data related to sediment transport and geomorphic trends within the study area. Phase 2 of the study will address the following objectives:

- Evaluate both long-term and flood event aggradation and degradation potential for Sacramento River system bed profiles.
- Evaluate the potential for aggradation at weirs that might affect flow distribution into bypasses.
- Assess the distribution of spawning gravels within the Sacramento River Flood Control Project today and 50 years in the future.
- Evaluate the potential reduction in riparian habitat and floodplain (potential loss of remaining overbank or “berm”) over the next 50 years.
- Assess implications of a sediment transport regime on long-term levee repair requirements for the Sacramento River Flood Control System.

Specific Phase 2 study tasks include sediment sampling, bank stability analysis, sediment transport modeling, and updates to HEC-RAS hydraulic modeling software to improve sediment transport calculation capabilities.

A.7 Settlement

This section details the locations of observed sinkhole and subsidence occurrences and a description of recent, ongoing, and planned remedial actions and improvements, and ongoing actions to improve future evaluations.

A.7.1 Historical Sinkhole and Subsidence Occurrences

ULE and NULE collected and cataloged information on historical occurrences of levee settlement and on completed or planned levee construction or improvements. Figures A-29 and A-30 show historical sinkhole and subsidence occurrences in the Sacramento and San Joaquin river watersheds, respectively. Most of the observed subsidence occurrences in the Sacramento River watershed are located along the Colusa Basin Drainage Canal and Yolo Bypass. Sinkholes are located sporadically across the Sacramento River watershed. In the San Joaquin River watershed, observed subsidence occurrences are located on the Eastside Bypass between Chowchilla River and Owens Creek and observed sinkholes are located on the Chowchilla Bypass.

A.7.2 Summary of Recent Remedial Actions

DWR's Levee Repairs Program and recent other projects have remediated locations where settlement problems have been reported from inspection and evaluation activities.

A.7.3 Summary of Ongoing and Planned Remedial Actions/Improvements

Sinkholes and subsidence are identified and monitored by maintaining agencies to help identify locations that would require repairs or a construction project for remediation. Settlement problems are addressed through DWR's Levee Repairs Program and through other projects being implemented to address subsidence. DWR's Levee Repairs Program is described in Section A-3, and many of the Early Implementation Program and USACE/Board projects identified in Section A-1 will preserve and enhance the integrity of SPFC levees with regard to settlement.

A.7.4 Ongoing Actions to Improve Future Evaluations

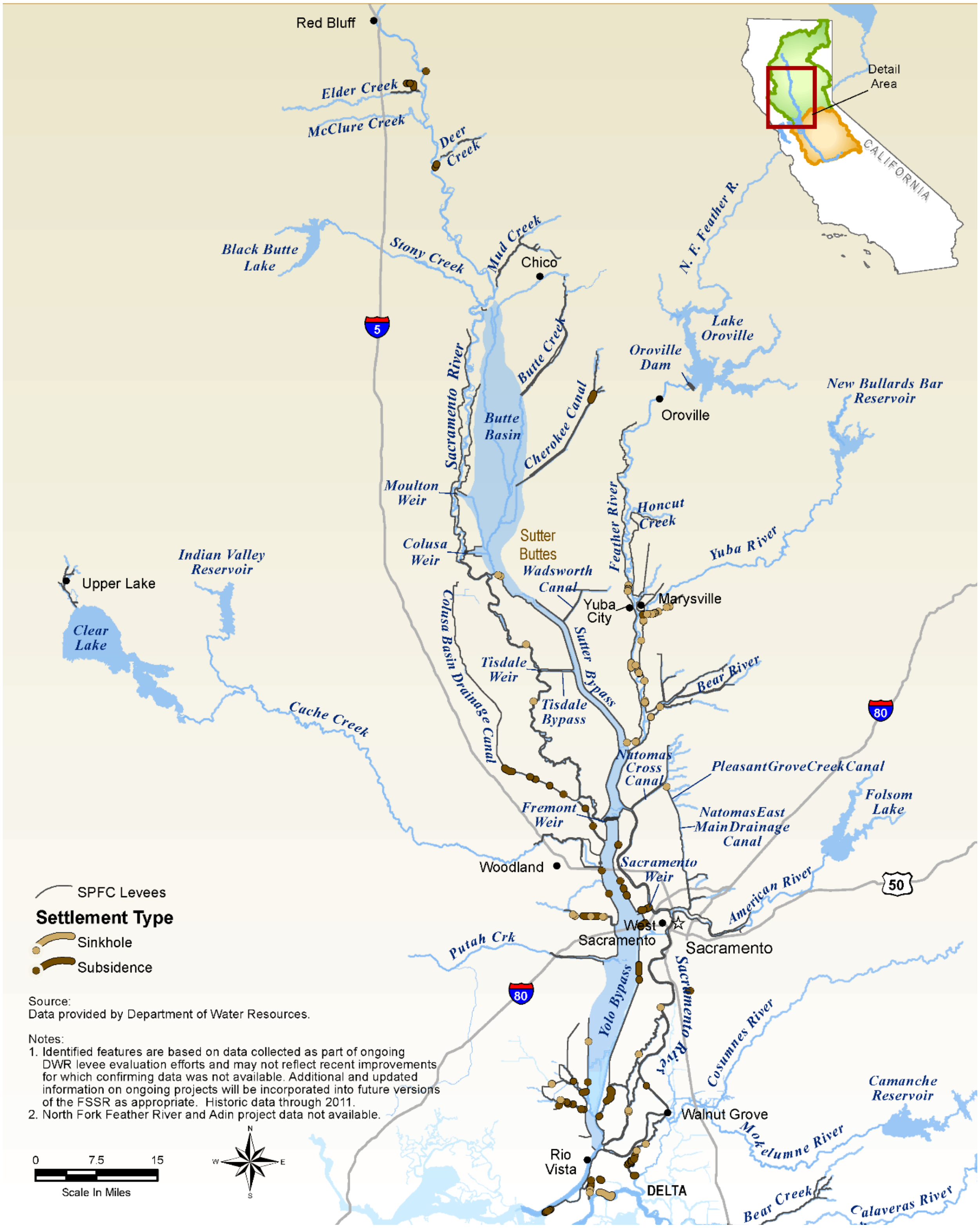
DWR continues to collect levee information using traditional and innovative methods, including using LiDAR and geomorphic mapping (Section A-1).

A.8 Penetrations

This section includes a brief description of recent, ongoing, and planned remedial actions, and ongoing actions to improve future evaluations regarding penetrations.

A.8.1 Summary of Recent Remedial Actions

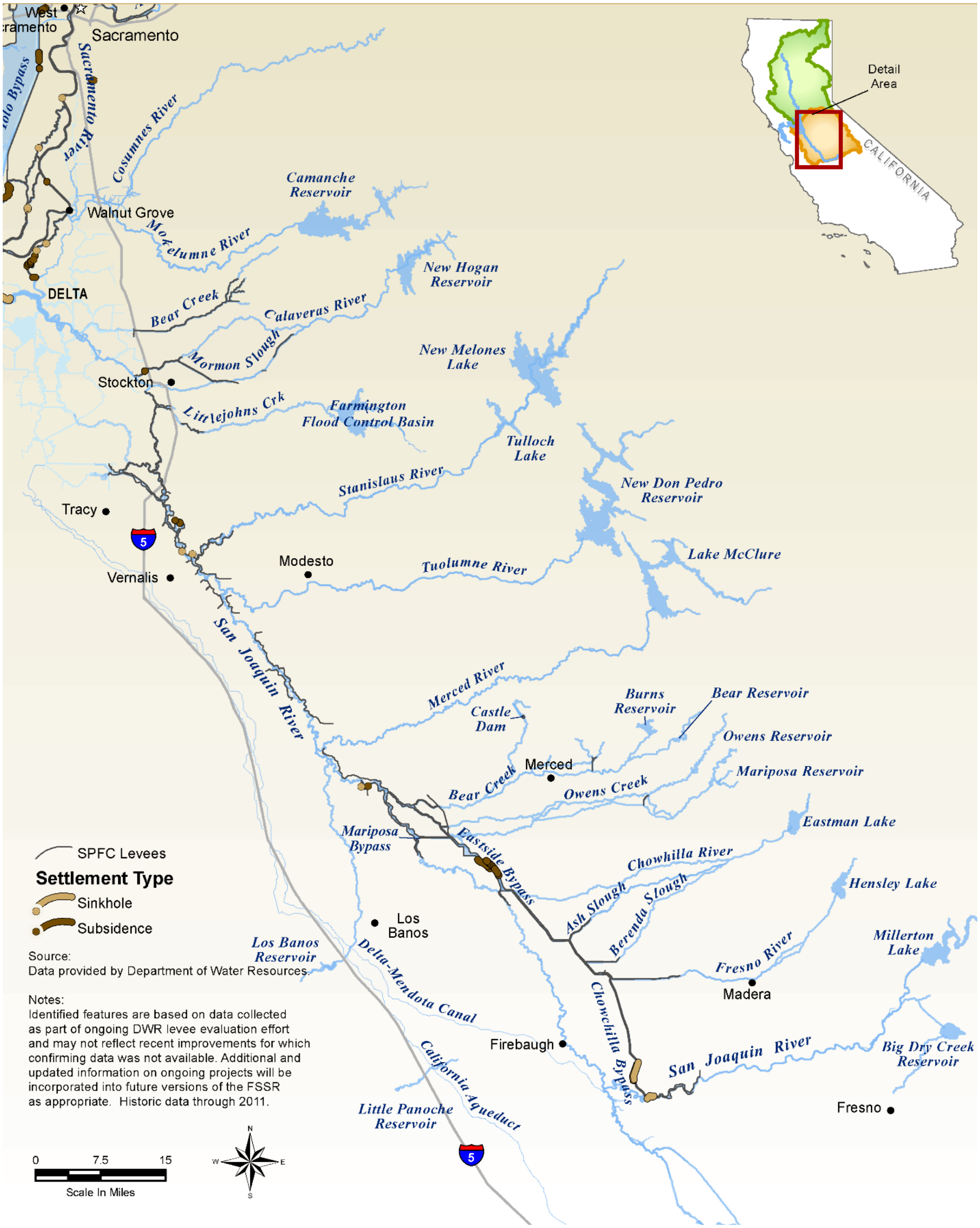
Between 2010 and 2015, a number of penetration repairs or replacements were initially reported by either the owner or observed by the maintaining agency. DWR conducted follow-up inspections and in several cases repaired or replaced the pipes. In other cases, the permittee repaired or replaced the penetration. Table A-7 describes and gives the location of of these penetrations.



Source:
Data provided by Department of Water Resources.

Notes:
1. Identified features are based on data collected as part of ongoing DWR levee evaluation efforts and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.
2. North Fork Feather River and Adin project data not available.

Figure A-29. Historical Sinkholes and Subsidence Distresses in the Sacramento River Watershed



Source:
Data provided by Department of Water Resources.

Notes:
Identified features are based on data collected as part of ongoing DWR levee evaluation effort and may not reflect recent improvements for which confirming data was not available. Additional and updated information on ongoing projects will be incorporated into future versions of the FSSR as appropriate. Historic data through 2011.

Figure A-30. Historical Sinkholes and Subsidence Distresses in the San Joaquin River Watershed

Table A-7. Penetrations Repaired or Replaced between in 2009 and 2015

Penetration Description	Location	Year Completed
Removal and replacement of a 12-inch steel irrigation pipe. Indications of leakage on landside slope of levee. Positive closure device and siphon breaker added to new pipe	Sacramento River	2015
Remove existing 14-inch diameter irrigation pipe and replace with new 16-inch steel irrigation pipe	Sutter Bypass	2015
Properly abandon 36-inch pipe by removing sections of metal pipe at daylight with levee shoulder and fill center section with concrete	Knights Landing Ridge Cut	2015
Damage to a 30-inch corrugated metal drainage culvert was discovered during routine inspection by Sutter Maintenance Yard. The embankment at the outlet of the culvert had erosion damage. The culvert was replaced with a reinforced concrete box culvert. Rock Revetment and concrete headwalls placed to reduce erosion potential.	Sutter Bypass	2014
Remove existing 24-inch pipeline and replace with 24-inch welded steel pipeline. Installation of positive closure device, siphon breaker, and demolition of pump house.	Sacramento River	2014
Remove existing 18-inch pipeline and replace with 18-inch welded steel pipeline. Installation of positive closure device, siphon breaker, and demolition of pump house.	Sacramento River	2014
Removal and replacement of a 14-inch steel pipe with a new 14-inch steel pipe	Sacramento River	2014
replace existing gasline with a new 8-inch gas pipeline	Feather River	2014
A 30-inch corrugated metal pipe was video inspected revealing severe damage and deterioration of the pipe walls. Holes in the pipe allowed significant flow to exit the pipe and flow under the pipe. The pipe was removed, and a new 30-inch double walled corrugated HDPE pipe was installed in its place.	Butte Creek	2013
Remove and replace 30-inch discharge pipe	Cache Slough	2013

Note:
HDPE = high density polyethylene

Most penetrations through SPFC levees are maintained by entities other than DWR. Information is not available to help identify the number of pipes that may have failed or that may have been repaired or replaced by entities other than DWR. At this time, visual inspections are ongoing and will update the database in response to changes in pipe conditions. These inspections track maintenance activities and potential performance issues that may occur as a result of aging penetrations or high water events.

The FSRP is another effort funded under Proposition 1E that repairs critical penetrations through the levee system. Penetrations in rural areas that penetrate the levee below the design water surface elevation may qualify for repair under FSRP. FSRP will evaluate, prioritize, and repair penetrations.

A.8.2 Summary of Ongoing and Planned Remedial Actions

DWR continues to visually inspect, identify, repair, and/or replace penetrations that could compromise the structural integrity of a levee. It is difficult to determine when remedial action is needed because internal erosion caused by penetrations often remains hidden until a surface expression occurs.

A.8.3 Ongoing Actions to Improve Future Evaluations

Ongoing actions to improve future evaluations of levee penetrations include the DWR Utility Crossing Inventory Program (UCIP). The goal of the program is to develop a systemwide, searchable database of all existing utility crossings. The program has developed field survey protocols and criteria for incorporating utility crossings into current inspection ratings. Internal inspection of penetrations will be needed to assess any integrity issues that are not visible on the surface. UCIP will investigate acceptable methods for internal inspection and develop procedures for the internal inspection of penetrations.

A.9 Levee Vegetation

This section includes a discussion of the DWR Vegetation Inspection Criteria for Standard Levees (DWR, 2015), and describes recent ongoing and planned remedial actions. This section also describes ongoing actions to improve future evaluations.

A.9.1 DWR Vegetation Inspection Criteria for Standard Levees

The DWR Vegetation Inspection Criteria for Standard Levees – Long Waterside Slope and Landside Berm (DWR, 2015) are shown on Figure A-31a. The DWR Vegetation Inspection Criteria for Standard Levees – Short Watersdie Slope and Short Unsubmerged Waterside Slope (DWR, 2015) are shown on Figure A-31b.

A.9.2 Summary of Recent Remedial Actions

DWR and maintaining agencies conduct levee vegetation maintenance activities that include removing vegetation and downed trees that could obstruct the natural flow of water, and controlling weeds, grasses, emergent vegetation, and woody vegetation on levees. DWR’s maintenance yards routinely identify and remove trees, which are considered to have the potential to fall and undermine levees. Other specific routine maintenance activities include removing debris, spraying herbicides, mowing and burning vegetation on slopes, and dragging levee slopes.

DWR may implement additional changes to its inspection program as existing USACE policies are refined over time, and as other levee management issues arise. The California Levee Vegetation Research Program (CLVRP) is being conducted by DWR in partnership policy makers, levee managers, and researchers within federal, State, and local agencies. The CLVRP is undertaking research that builds upon existing knowledge about vegetation and its impacts on levees. This research is used to develop scientifically-based levee management policies and practical maintenance procedures.

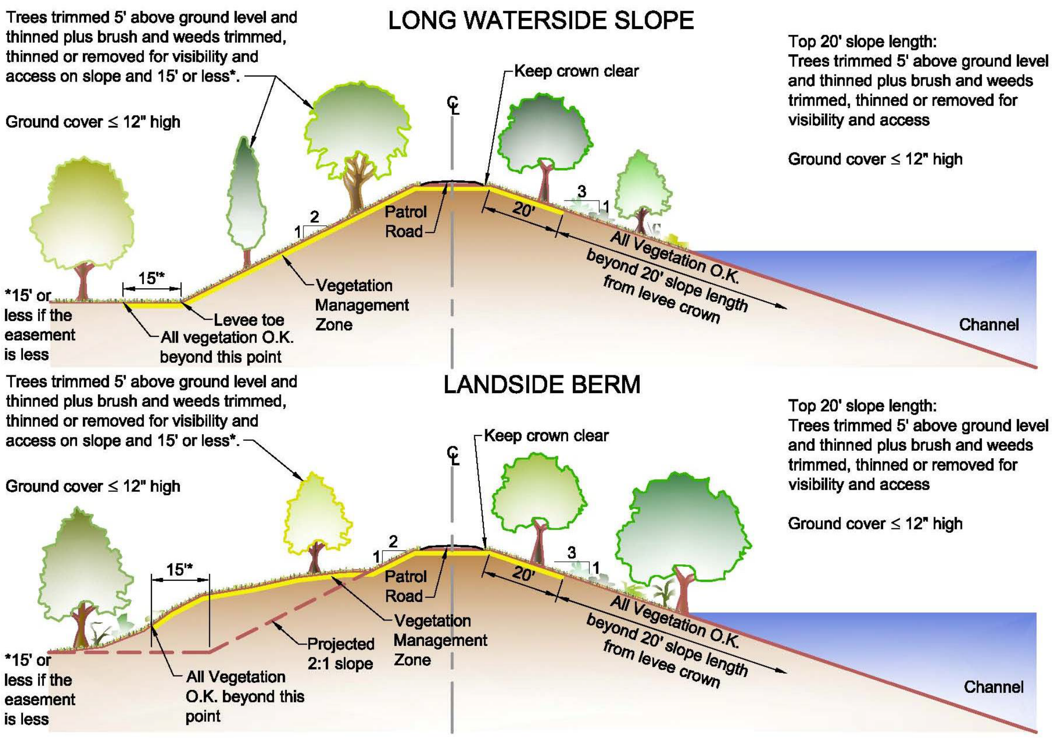


Figure A-31a. DWR Vegetation Inspection Criteria for Standard Levees – Long Waterside Slope and Landside Berm (2015)

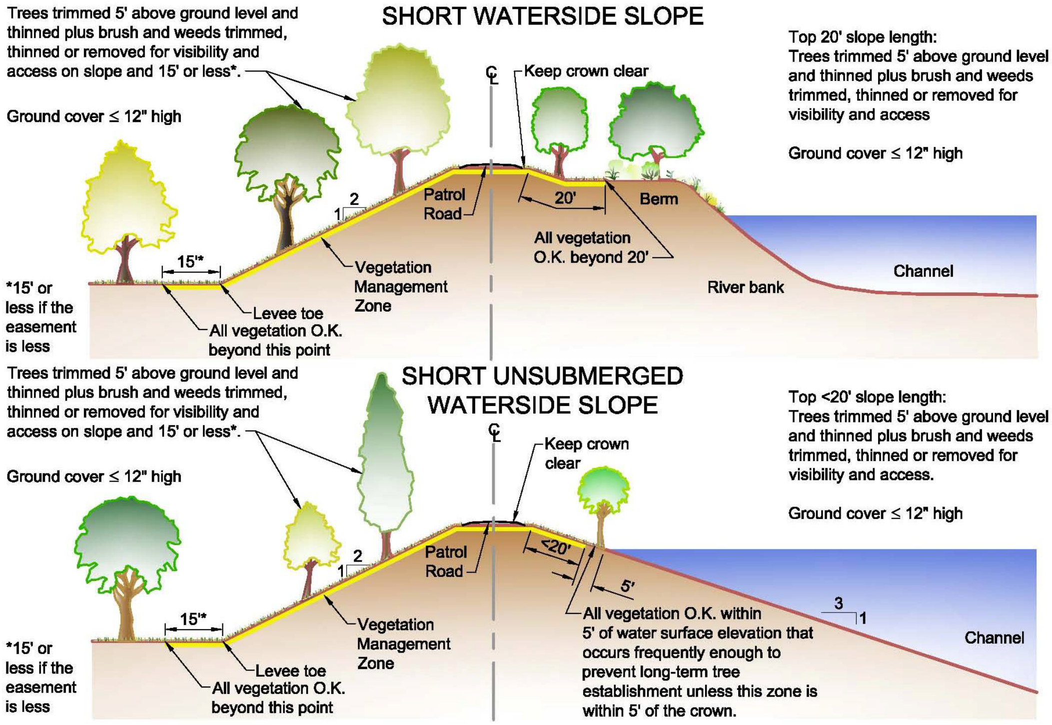


Figure A-31b. DWR Vegetation Inspection Criteria for Standard Levees – Short Waterside Slope and Short Unsubmerged Waterside Slope (2015)

A.9.3 Summary of Ongoing and Planned Remedial Actions

New levee sections being constructed under the Early EIP or UFRR Programs and USACE/Board projects (Section A-1) will comply with USACE levee vegetation criteria (ETL 1110-2-583) – USACE, 2014. DWR and the Board require that maintaining agencies are responsible for maintenance of SPFC levees and that they comply with the DWR vegetation criteria. Progress toward implementing the vegetation requirements will be reviewed by USACE, the Board, and DWR to assess progress in complying with milestones. Maintaining agencies are required to develop a plan to resolve vegetation problems. Finally, DWR's maintenance yards and other maintaining agencies will routinely perform annual maintenance and remediate identified problems, such as identifying and removing trees considered to have the potential to fall and undermine levees.

A.9.4 Ongoing Actions to Improve Future Evaluations

Differences between USACE and DWR levee vegetation criteria are significant enough that a comparison of levees against USACE criteria would likely show more SPFC levees do not comply with current USACE criteria. DWR and USACE continue to work to resolve these differences.

DWR may implement additional changes to its inspection program as existing USACE policies are refined over time, and as other levee management issues arise. The California Levee Vegetation Research Program is being conducted by DWR in partnership with the Sacramento Area Flood Control Agency, Board, United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration, California Department of Fish and Game, and local agencies that are members of the California Central Valley Flood Control Association. The partnership conducts research that will determine the extent to which woody vegetation, such as trees, may affect the safety of levees in the Central Valley. The research is being conducted in parallel with USACE's complementary national research program.

A.10 Rodent Damage

This section includes the results of DWR annual inspections for animal control, and a description of recent, ongoing, and planned remedial actions, and ongoing actions to improve future evaluations.

A.10.1 Results of Inspections

DWR visually inspects SPFC levees for burrowing animal damage at least twice a year, and reports results annually. Table A-8 shows the DWR inspection rating descriptions for animal control of burrowing animals.

Table A-8. Levee Inspection Rating Descriptions for Burrowing Animal Control on Earthen Levees

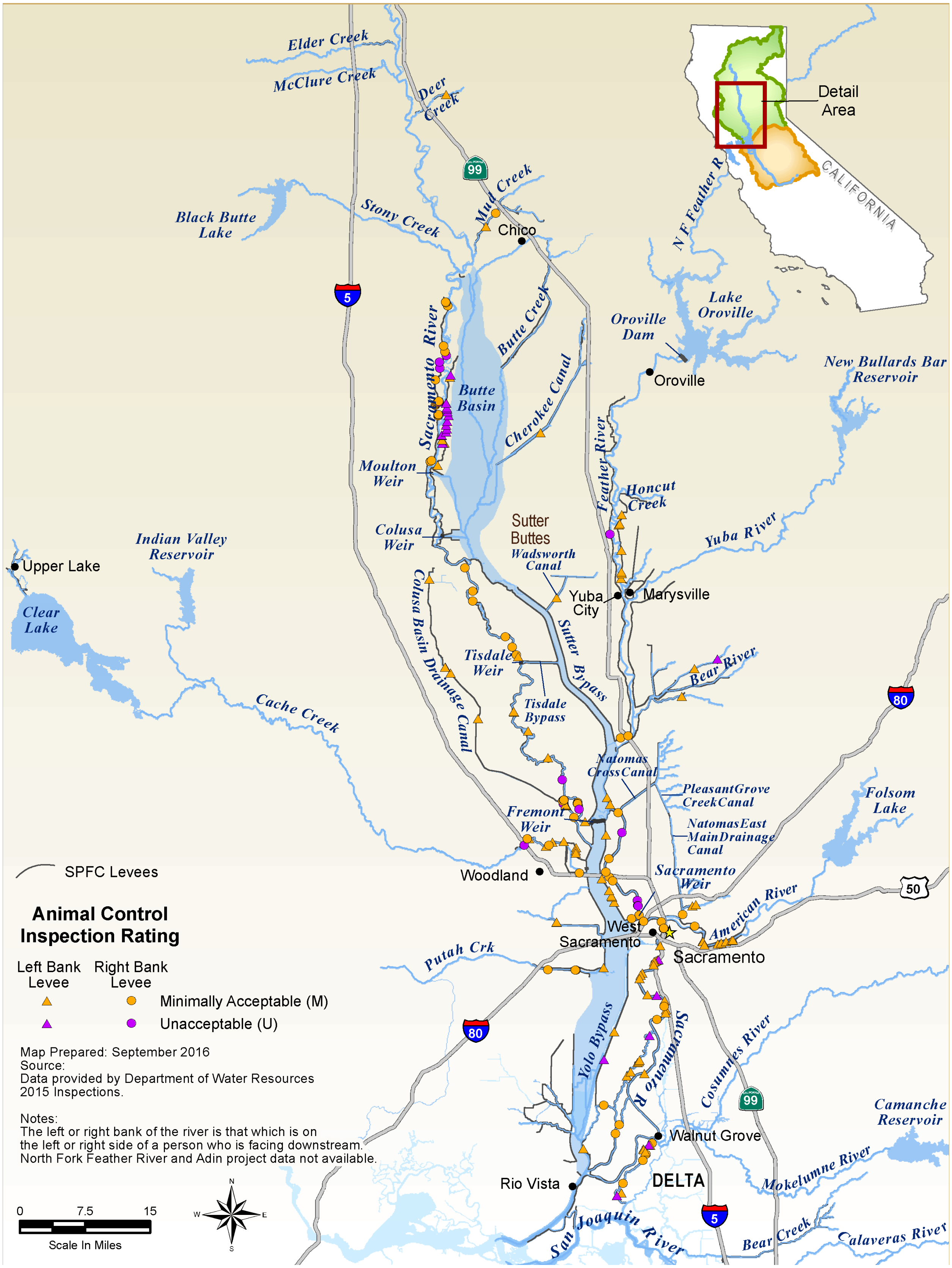
Inspection Rating	Rating Descriptions
Acceptable (A)	Burrowing animal holes have been backfilled in a manner that adequately addresses the void created in the levee. A continuous animal burrow control program is in place that includes elimination of active burrowing and the filling of existing burrows. Less than five holes (i.e., a hole that penetrate the levee prism more than 6 inches) in any 25-foot length of levee, and that has less than 2 cubic feet of material observed beside any hole. All holes are less than 6 inches in diameter.
Minimally Acceptable (M)	Either more than five holes were observed in a 25-foot length of levee or at least one hole greater than 6 inches in diameter was observed. No burrowing animal activity was observed on the opposing slope, and holes penetrate the levee prism more than 6 inches.
Unacceptable (U)	More than 2 cubic feet of material was observed beside at least one burrow. Either five or more burrows were observed in a 25-foot length of levee or a burrow 6 inches in diameter or more was observed with burrowing animal activity on the opposing slope. Burrows penetrate the levee prism more than 6 inches.

Animal control inspection ratings from the 2015 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (DWR, 2015a) are shown on Figures A-32 and A-33 for the Sacramento and San Joaquin river watersheds, respectively. The inspection data indicate that there were 154 Minimally Acceptable sites and 37 Unacceptable sites within the Sacramento River watershed. In the San Joaquin River watershed there were 171 Minimally Acceptable sites and 50 Unacceptable sites.

A.10.2 Summary of Recent Remedial Actions

Maintaining agencies are responsible for burrowing animal abatement and damage repair, and implement their own burrowing animal abatement programs. While burrowing animal abatement practices vary among maintaining agencies, current remedial actions under DWR’s Rodent Abatement Program include the following:

- Continuous monitoring of all DWR-maintained levees for burrowing animal activity.
- Year-round application of burrowing animal bait, as needed.
- Application of sulfur gases to some burrowing animal runways and dens in areas frequently visited by the public and domestic animals.
- Grouting all newly discovered burrowing animal runways and dens once a year.
- Environmental permitting for the Rodent Abatement Program where appropriate permits are needed to protect special-status wildlife and wildlife habitats.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources 2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
North Fork Feather River and Adin project data not available.

Figure A-32. 2015 Animal Control Inspection Ratings in the Sacramento River Watershed

SPFC Levees

Animal Control Inspection Rating

Left Bank Levee	Right Bank Levee	
▲	●	Minimally Acceptable (M)
▲	●	Unacceptable (U)

Map Prepared: September 2016
Source:
Data provided by Department of Water Resources
2015 Inspections.

Notes:
The left or right bank of the river is that which is on the left or right side of a person who is facing downstream.
*The SPFC status of the Lower San Joaquin and Tributaries is currently in USACE review.

Figure A-33. 2009 Animal Control Inspection Ratings in the San Joaquin River Watershed

A.10.3 Summary of Ongoing and Planned Remedial Actions

No changes are anticipated to the remedial actions for burrowing animal abatement/damage repair. Remedial actions will be implemented annually by maintaining agencies as animal activity is noted in inspections.

A.10.4 Ongoing Actions to Improve Future Evaluations

To improve evaluation, and promote more timely and thorough repair of burrowing animal damage, USACE and DWR have increased communication about inspections.

As the initial identification of levee reaches affected by animal burrows has been completed through the DWR Animal Burrow Hole Persistence Study, additional inspection efforts could be performed to further examine the incidence of animal burrows on levees as follows:

- Measure burrow hole density and prevalent hole diameter
- Assess maintenance practices to control animal population and mitigate damage to levees
- Identify the animal species involved
- Correlate animal species activity with habitat and land use
- Study and obtain environmental pemrits for concerns regarding protected wildlife species using information about animal burrows in levees and wildlife habitat in adjacent areas.

A.11 Encroachments

This section describes recent, ongoing, and planned remedial actions regarding encroachments, and ongoing actions to improve future evaluation of encroachments.

A.11.1 Summary of Recent Remedial Actions

The Board is responsible for reviewing applications and issuing permits for encroachments within the Board’s jurisdiction. All new encroachments must be approved by the both the Board and USACE before a permit is issued.

DWR inspectors perform field inspections of most permitted encroachments to determine whether they are constructed or installed in accordance with permit conditions. DWR inspectors also document unpermitted encroachments and inadequately maintained permitted encroachments within the Board’s jurisdiction. The Board relies on maintaining agencies to help identify and remove unpermitted encroachments.

In October 2009, Assembly Bill 1165 was passed, which gave the Board more authority for encroachment enforcement. Additional legislation was passed in October 2013 under Senate Bill 753. Senate Bill 753 amended California Water Code regarding the Board’s authority to remove or modify encroachments. Under the new authority, the Board can now impose administrative penalties and place a lien to recover abatement costs. The Board’s Operations Branch is responsible for permitting, regulating, and enforcing of encroachments on levees, in floodplains, and near regulated streams within the Board’s jurisdiction. Since May 2009, 185 enforcement actions in the Central Valley have been initiated; 125 of those have been resolved.

A.11.2 Summary of Ongoing and Planned Remedial Actions

DWR will continue to inspect construction or installation of newly permitted encroachments in accordance with permit conditions. DWR will also continue to document and report illegal encroachments and inadequately maintained encroachments to maintaining agencies and the Board for remedial actions.

If any person or organization deems any construction or modification necessary within the Board's jurisdiction, that party must apply for an encroachment permit through the Board.

A.11.3 Ongoing Actions to Improve Future Evaluations

As a part of ongoing efforts to improve documentation and maintenance for the SPFC regarding encroachments, DWR and the Board are undertaking the following efforts:

- Continue to update existing levee logs to include data from O&M manuals, existing inspection results, and historical data.

  This information will be placed into a database format that will function as documentation of system features and structures. All data will be field-verified and georeferenced.A database of encroachments identified through the USACE Periodic Inspection Reports and rated Unacceptable has been developed by the Board. As of April 2016, 9,705 encroachments have been entered into the database out of an estimated 12,000. This database is being used by both the Board and maintaining agencies to track the progress of encroachments as they are investigated and resolved.

- Create a georeferenced database of encroachment permits and use this effort with the updated levee logs and the encroachment database to assist in determining which encroachments are permitted, and the number and type of unpermitted encroachments.

- Continue the Enforcement Authority Delegation (EAD) program with participating Local Maintaining Agencies to address encroachment issues.

  Under EAD program, the Board has delegated authority to DWR to issue Notices of Violations, which are the first step for taking legal action regarding unacceptable encroachments. DWR has researched Sacramento and San Joaquin Drainage District easements along the MA 9 levee and has surveyed those easement boundaries. Survey monuments have been installed throughout most of MA 9 and are used to identify and enforce encroachments within the easements.

Other maintaining agencies have also accepted delegated authority for issuing Notices of Violations, including the American River Flood Control District, the City of Sacramento, and the San Joaquin Flood Control and Water Conservation District. As of November 2016, the maintaining agencies with delegated enforcement authority have reported resolving 61 encroachment issues through participation in the EAD program. The EAD program will continue to grow, and more encroachment issues will be resolved.

A.12 References

California Department of Water Resources (DWR). 2007. Interim Levee Vegetation Inspection Criteria.

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———. 2010a. State Plan of Flood Control (SPFC) Descriptive Document. Central Valley Flood Management Planning Program. December.

———. 2010c. Annual Supplemental Erosion Survey of the San Joaquin Flood Control System. April.

———. 2011a. Geotechnical Assessment Report, North NULE Study Area. April.

———. 2011b. Geotechnical Assessment Report, South NULE Study Area. May.

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California Levee Roundtable. 2009. California's Central Valley Flood System Improvement Framework. February 27.

United States Army Corps of Engineers (USACE). 2007. 2007 - Field Reconnaissance Report of Bank Erosion Sites and Site Priority Ranking. Sacramento River Flood Control Levees, Tributaries and Distributaries. Sacramento River Bank Protection Project. December 18.

———. 2010. 2009 Field Reconnaissance Report of Bank Erosion Sites and Site Priority Ranking. Sacramento River Flood Control Levees, Tributaries and Distributaries. Sacramento River Bank Protection Project. January 15.

United States Army Corps of Engineers and The Reclamation Board (USACE and Board). 1953. Memorandum of Understanding Respecting the Sacramento River Flood Control Project.

A.13 Acronyms and Abbreviations

Board	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
DWR	California Department of Water Resources
FSSR	Flood System Status Report
LiDAR	Light Detection and Ranging
NULE	Nonurban Levee Evaluations
O&M	operations and maintenance
RM	River Mile
SPFC	State Plan of Flood Control
State	State of California
ULE	Urban Levee Evaluations
USACE	United States Army Corps of Engineers

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Attachment 1 – USACE Periodic Inspection Report Cards

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DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 10 2010

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the Reclamation District (RD) 0017, 2094, 2096, 2075, 2064 - SJ River East Levee system was conducted between December 14, 2009 and January 18, 2010. The system is comprised of eight segments.

Segment Name
RD 0017 - Mossdale - Unit 1, French Camp-Walker Slough left bank
RD 0017 - Mossdale - Unit 2, San Joaquin River right bank
RD 2064 - River Junction - Unit 1, San Joaquin River right bank
RD 2064 - River Junction - Unit 2, Stanislaus River right bank
RD 2075 - McMullin
RD 2094 - Walthall - Unit 1, San Joaquin River right bank
RD 2094 - Walthall - Unit 2, spur levee
RD 2096 - Wetherbee Lake

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99

Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Based on observations made as part of the inspection, the RD 0017, 2094, 2096, 2075, 2064 - SJ River East system is rated unacceptable because of encroachments, erosion and bank caving, depressions and rutting, culverts and discharge pipes, and pump station deficiencies (shown in red and orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. Encroachment and erosion/bank caving maintenance should be conducted in accordance with the Framework. Depressions and rutting in RD2075, culvert/discharge pipe, and pump station maintenance should be corrected immediately. The RD 0017, 2094, 2096, 2075, 2064 - SJ River East system is inactive for PL 84-99 rehabilitation assistance effective the date of this letter.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing as intended during the next flood event: unwanted vegetation growth and depressions and rutting in RD 2064 (shown in purple and yellow on the Report Card). Vegetation maintenance should be conducted in accordance with the Framework. Maintenance of the depressions and rutting in RD 2064 must be completed no later than October 31, 2011 to bring this item to at least a minimally acceptable condition.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection to the issuing of the permit *and* 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the efforts of the Local Maintaining Agencies to work together to complete repairs of unacceptable items between the inspection and release of this report. The efforts have improved the system rating and the level of flood protection for residents of this system.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition or meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the

Corps to schedule an inspection. It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted by October 31, 2011, or any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and the Congressional delegation as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

RD 0017, 2094, 2096, 2075, 2064 - SJ River East Unacceptable-Inactive	RD 0017 Unit 1	RD 0017 Unit 2	RD 2096	RD 2094 Unit 1	RD 2094 Unit 2	RD 2075	RD 2064 Unit 1	RD 2064 Unit 2	
Operations and Maintenance Manuals	A	A	M	A	A	M	M	M	
Emergency Supplies and Equipment	A	A	A	A	A	M	M	M	
Flood Preparedness and Training	A	A	M	M	M	M	M	M	
Unwanted Vegetation Growth	U	U	U	U	U	U	U	U	
Sod Cover	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Encroachments	U	U	U	M	M	U	U	U	
Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Slope Stability	A	M	A	A	A	A	A	M	
Erosion/Bank Caving	M	U	A	A	A	M	M	U	
Settlement	M	M	M	M	M	M	M	M	
Depressions/Rutting	M	U	A	A	A	U	U	U	
Cracking	A	A	A	A	A	A	A	A	
Animal Control	M	M	M	A	A	M	M	M	
Culverts/Discharge Pipes	N/A	N/A	U	N/A	N/A	N/A	N/A	N/A	
Riprap Revetments & Bank Protection	N/A	A	N/A	N/A	N/A	A	A	N/A	
Revetments other than Riprap	N/A	M	M	A	N/A	N/A	A	M	
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Seepage	M	A	A	A	A	A	A	A	
Pump Station	N/A	N/A	U	N/A	N/A	N/A	N/A	N/A	

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Likely Prevents Performance In Next Flood Event (Framework)
Not Likely to Prevent Performance In Next Flood Event
Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the American River Flood Control District (FCD) – American River Right Bank, Natomas East Main Drainage Canal (NEMDC) system was conducted between December 29, 2009 and February 8, 2010. The system is comprised of four segments.

Segment Name
Unit 1, Arcade Creek left bank
Unit 2 south, NEMDC below Arcade Creek
Unit 3, American River right bank
Units 9 and 10, American River right bank - MA 10 and 11

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Based on observations made as part of the inspection, the

American River FCD –American River Right Bank, NEMDC system is rated minimally acceptable because of a combination of unwanted vegetation growth, encroachments, slope stability, erosion/bank caving, animal control, and culverts/discharge pipes. These items should be monitored over time. The American River FCD – American River Right Bank, NEMDC system will remain active for PL 84-99 rehabilitation assistance.

The unwanted vegetation growth, encroachment, and culvert/discharge pipes items were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event. Unwanted vegetation growth and encroachment maintenance should be conducted in accordance with the Framework. A video inspection of the culverts/discharge pipes associated with the federally authorized pump stations and any maintenance necessary as a result of those inspections shall be completed no later than October 31, 2011 to bring these items to at least a minimally acceptable condition. If the required repairs are not made within the timelines specified, the system will be rated unacceptable and inactive for PL84-99 rehabilitation assistance.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board (CVFPB), 2) the Corps had no objection to the issuing of the permit *and* 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

We appreciate your interest in continuing to be a part of the PL 84-99 program. If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

Michael D. Mahoney, P.E.
Chief, Construction-Operations Division
Levee Safety Officer

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

American River FCD – American River Right Bank, NEMDC Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>American River FCD – American River Right Bank, NEMDC Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000393
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 1, Arcade Creek left bank</td><td>5204000398</td><td>M</td></tr>
<tr><td>Unit 2 south, NEMDC below Arcade Creek</td><td>5204000397</td><td>M</td></tr>
<tr><td>Unit 3, American River right bank</td><td>5204000393</td><td>M</td></tr>
<tr><td>Units 9 and 10, American River right bank – MA 10 and 11</td><td>5204000390</td><td>M</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating *</td><td>Assigned Rating: Minimally Acceptable</td></tr>
</table>

USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Active
Preparing Contractor Name and Address	Hultgren-Tillis Engineers 2221 Commerce Avenue, Suite A-1 Concord, California 94520

* System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified Items* rated "unacceptable" which require immediate correction, but the System was considered to perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner. *Refer to Appendix C.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Michael Mahoney, P.E.
Levee Safety Officer

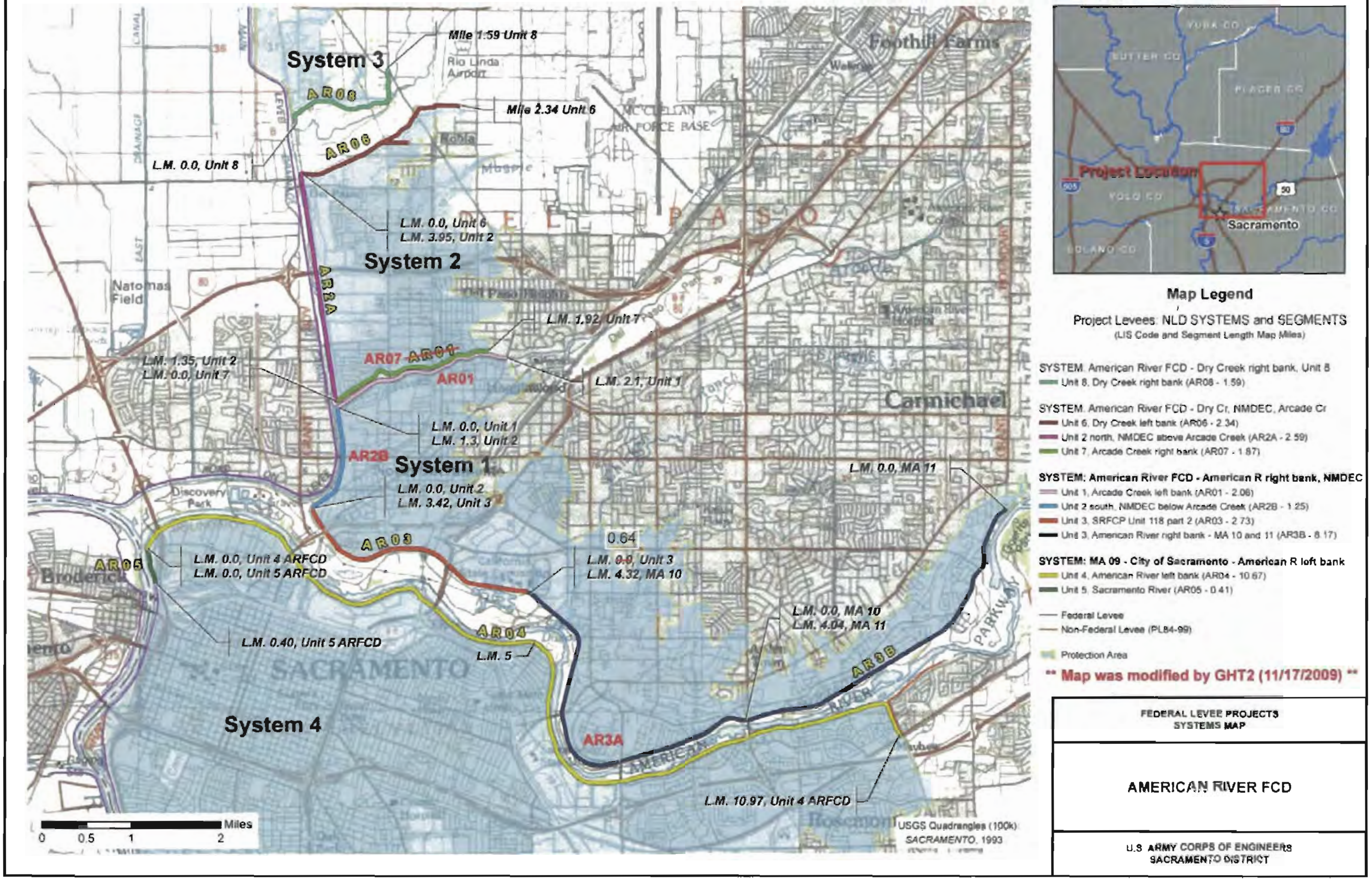
cc:

CO-E

CO-OR

ED

ED-G



FEDERAL LEVEE PROJECTS
SYSTEMS MAP

AMERICAN RIVER FCD

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

American River Right Bank, NEMDC Minimally Acceptable-Active	Unit 1, Arcade Creek Left Bank	Unit 2, South NMDEC below Arcade Creek	Unit 3, SRFCP	Unit 3, American River Right Bank - MA 10 and 11					
Operations and Maintenance Manuals	M	M	M	M					
Emergency Supplies and Equipment	A	A	A	A					
Flood Preparedness and Training	A	A	A	A					
Unwanted Vegetation Growth	U	M	U	U					
Sod Cover	A	M	A	A					
Encroachments	U	U	U	U					
Closure Structures	A	N/A	A	N/A					
Slope Stability	A	M	A	A					
Erosion/Bank Caving	M	A	A	A					
Settlement	A	A	A	A					
Depressions/Rutting	A	A	A	A					
Cracking	A	A	A	A					
Animal Control	M	M	M	M					
Culverts/Discharge Pipes	N/A	N/A	N/A	U					
Riprap Revetments & Bank Protection	A	N/A	N/A	N/A					
Revetments other than Riprap	A	N/A	N/A	N/A					
Underseepage Relief Wells/Toe Drainage Systems	A	N/A	N/A	N/A					
Seepage	A	A	A	A					

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch JUN 26 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

This is in response to your July 31, 2013, letter requesting a re-inspection of the Bear Creek - Units 7 West and 21 system. Photos and additional encroachment information were provided with your request. A revised report card and unacceptable deficiency list are enclosed. The Bear Creek - Units 7 West and 21 system is comprised of 2 segments listed in the report card.

Erosion and animal control issues were corrected by San Joaquin County Public Works. The photos of erosion repairs along Pixley Slough show that the most serious erosion sites have been repaired. No rodent activity was noted during our recent site visit. Erosion and animal control ratings have improved as shown on the enclosed report card.

We revised the rating of a critical encroachment observation based on the additional information you provided. The information in the reinspection request shows that the pipes under Interstate 5 were approved as part of encroachment permit applications 4293 and 4293A. Unacceptable observations remain in encroachments, vegetation, sod cover, depressions and rutting, cracking, and riprap revetments. An engineering determination concluded these issues would not prevent the system from performing as intended during the next flood event. The 2 year timeframe for correction of sod cover, depressions and rutting, cracking, and riprap revetments observations expired on April 23, 2014. Therefore, the rating for these items is unacceptable as the issues have not been corrected within the 2 year timeframe (shown in pink on the Report Card). The 2 year timeframe for correction of encroachment and vegetation observations had not yet passed. Therefore, the rating for encroachments and vegetation is minimally acceptable (shown in yellow on the Report Card). The sponsor has 2 years from the expiration of the California Central Valley Flood System Improvement Framework, June 29, 2012, to correct the encroachment and vegetation observations otherwise, the next inspection will document the items as not being corrected within the allotted timeframe.

Based upon the information you provided, our recent site visit, and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the

Bear Creek - Units 7 West and 21 System is rated unacceptable and is active in the PL 84-99 RP effective July 31, 2013, the date of your re-inspection request.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement. We appreciate the collective efforts of the Local Maintaining Agency and the Board to address these unacceptable items. We urge your Board and the Local Maintaining Agency to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, San Joaquin County Office of Emergency Services, the Department of Water Resources Flood Operations Center, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

M J Farrell

Michael J. Farrell
Colonel, U.S. Army
District Commander

	System: Bear Creek-Units 7 West & 21 System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Active	Unit 7 West, Bear Creek Right Bank Below Pixley Slough (BC01)	Unit 21, Pixley Slough Right Bank (BC09)					
General	Operations and Maintenance Manuals	M	M					
	Emergency Supplies and Equipment	M	M					
	Flood Preparedness and Training	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M	M					
	Closure Structures	N/A	N/A					
	Slope Stability	M	M					
	Erosion/Bank Caving	M	M					
	Animal Control	A	A					
	Culverts/Discharge Pipes	N/A	N/A					
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A					
Levee Embankments - Other Items	Vegetation Growth	M	M					
	Sod Cover	U	U					
	Settlement	A	A					
	Depressions/Rutting	M	U					
	Cracking	A	U					
	Riprap Revetments & Bank Protection	U	U					
	Revetments other than Riprap	N/A	N/A					
	Seepage	A	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 24 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

This is in response to your May 8, 2013, letter requesting a re-inspection of the Bear Creek - Units 12 South, 10 and 13 Levee system. The photo documentation of the corrections in your re-inspection request were sufficient to verify the corrections made in the field. A revised report card, photos of the corrections, and a revised unacceptable deficiency list serve as a summary of the findings. The system is comprised of 3 segments:

System: Bear Creek - Units 12 South, 10 and 13
Segments: Bear Creek – Unit 13, Middle Paddy Creek Left Bank
Bear Creek – Unit 10 East, South Paddy Creek Right Bank
Bear Creek – Unit 12 South, Paddy Creek Left Bank

The system rating is determined based on the USACE inspection checklist. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

The most concerning encroachment was addressed so the overall system rating is now minimally acceptable. The information in the reinspection request shows that the site appears to meet the conditions of As-Built drawing number CA-3-4-10, sheet 19 however a video inspection of the pipe though the levee is required. The Bear Creek - Units 12 South, 10 and 13 system is rated minimally acceptable and active for PL 84-99 rehabilitation assistance effective May 8, 2013.

The following items continue to be unacceptable: vegetation, animal control, and riprap revetments but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). Maintenance of the animal control and riprap revetments must be completed by April 23, 2014, 2 years from the date of the original letter transmitting the periodic inspection results to bring these items to at least a minimally acceptable condition. Vegetation and encroachment maintenance must be completed by June 29, 2014, 2 years from the date of the expiration of the California Central Valley Flood System Improvement Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Any deficiencies not corrected within the timelines noted above will be noted as pink during the next inspection and will cause the system to become inactive.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to address these unacceptable items. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office.

Sincerely,

Michael J. Farrell FOR
Colonel, U.S. Army / DARREN LEMASTER
District Commander LTC EN
DPTY CDR

Enclosures

System 8 Bear Creek - Units 12 South, 10 and 13 Minimally Acceptable - Active	Unit 13, Middle Paddy Creek Left Bank (BC08)	Unit 10 East, South Paddy Creek Right Bank (BC16)	Unit 12 South, Paddy Creek Left Bank (BC17)						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	M	M	M						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	N/A	N/A	N/A						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	A	A	A						
Erosion/Bank Caving	M	A	M						
Settlement	A	A	A						
Depressions/Rutting	A	A	A						
Cracking	A	A	A						
Animal Control	U	U	U						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	U	U	U						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

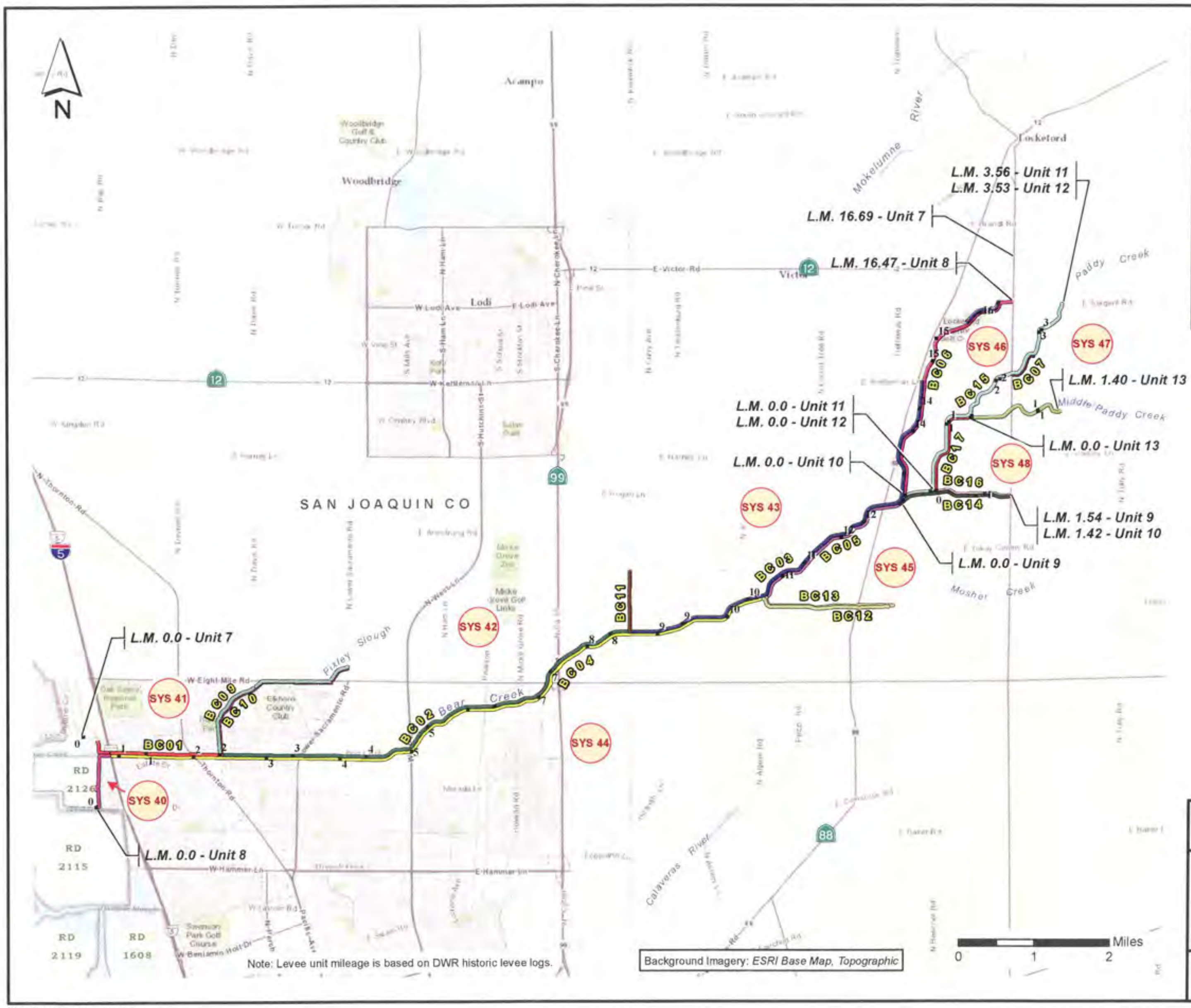
Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility



Note: Levee unit mileage is based on DWR historic levee logs.

Background Imagery: *ESRI Base Map, Topographic*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 40
- Unit 8 west - Bear Creek west of I-5 (BC18)

SYSTEM 41
- Unit 7 west - Bear Creek right bank below Pixley Slough (BC01)
- Unit 21 - Pixley Slough right bank (BC09)

SYSTEM 42
- Unit 22 - Pixley Slough left bank (BC10)
- Unit 7 - Bear Creek right bank above Pixley Slough (BC02)
- Unit 23 - spur levee along RR tracks, Bear Cr right bank (BC11)

SYSTEM 43
- Unit 7 east - Bear Creek right bank (BC03)

SYSTEM 44
- Unit 8 - Bear Creek left bank below Mosher Creek (BC04)
- Units 25 and 27 - Mosher Creek left bank (BC12)

SYSTEM 45
- Units 24 and 26 - Mosher Creek right bank (BC13)
- Unit 8 - Bear Creek left bank above Mosher Creek (BC05)
- Unit 9 - Paddy Creek left bank (BC14)

SYSTEM 46
- Unit 8 east - Bear Creek left bank above Paddy Creek (BC06)
- Units 10 and 11 - Paddy Creek right bank (BC15)

SYSTEM 47
- Unit 12 north -Paddy Creek above Middle Paddy Creek (BC07)

SYSTEM 48
- Unit 10 east - South Paddy Creek right bank (BC16)
- Unit 12 south - Paddy Creek left bank (BC17)
- Unit 13 - Middle Paddy Creek left bank (BC08)

**FEDERAL LEVEE PROJECTS
SYSTEMS MAP**

BEAR CREEK - STOCKTON, CA

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

Map Prepared by Jim Mars

FEB 2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 23 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Unit 7 east system was conducted between September 27 and 29, 2010. The system is comprised of one segment.

System: Bear Creek - Unit 7 east
Segment: Bear Creek - Unit 7 east, Bear Creek right bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Unit 7 east system is rated unacceptable because of encroachments (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that encroachments could prevent the system from performing as intended during the next flood event. Encroachments should be addressed in accordance with the Framework. Because of the Framework, the Bear Creek - Unit 7 east system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, depressions and rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, depressions and rutting, cracking, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Bear Creek - Unit 7 east system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and the Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 3 Bear Creek - Unit 7 East Unacceptable - Active	Unit 7 East, Bear Creek Right Bank (BC03)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	U								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	M								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	U								
Cracking	U								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	U								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

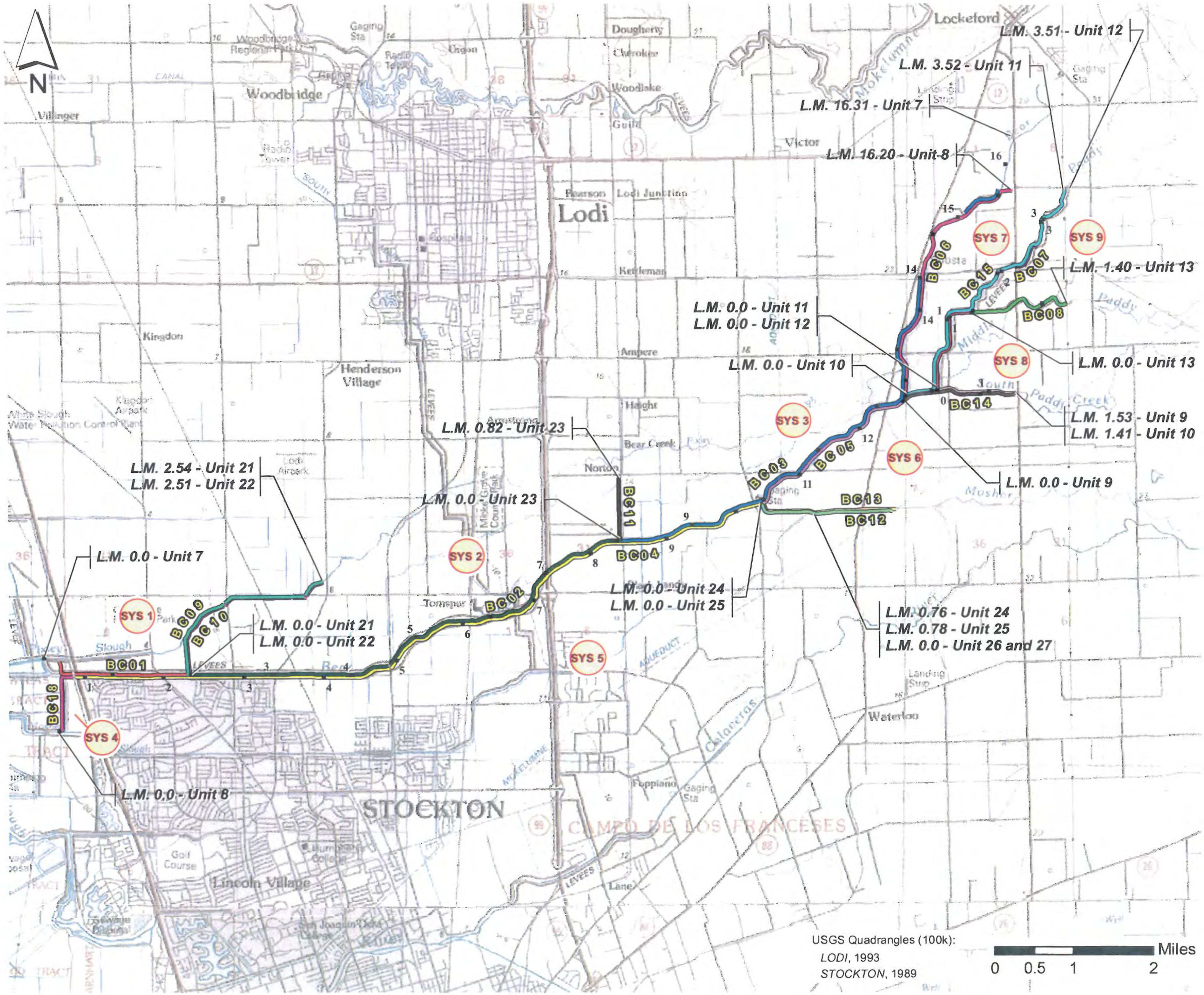
Not Likely to Prevent Performance In Next Flood Event (Framework)

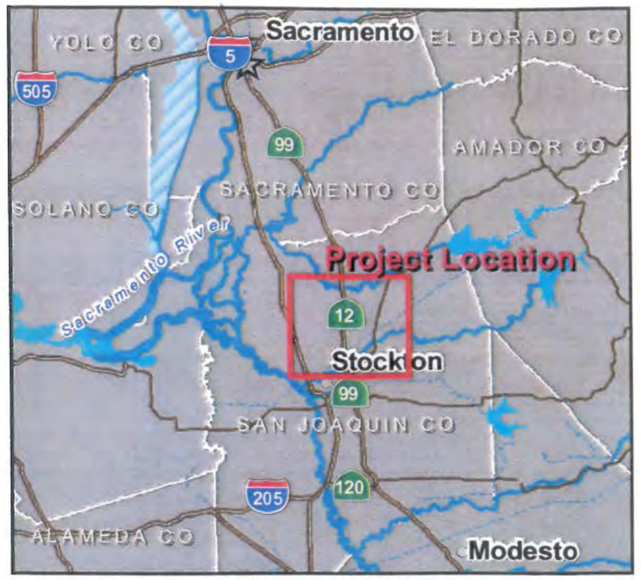
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

November 29, 2010





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- Unit 7 west - Bear Creek right bank below Pixley Slough (BC01)
- Unit 21 - Pixley Slough right bank (BC09)

SYSTEM 2
- Unit 22 - Pixley Slough left bank (BC10)
- Unit 7 - Bear Creek right bank above Pixley Slough (BC02)
- Unit 23 - spur levee along RR tracks, Bear Cr right bank (BC11)

SYSTEM 3
- Unit 7 east - Bear Creek right bank (BC03)

SYSTEM 4
- Unit 8, Bear Creek west of I-5 (BC18)

SYSTEM 5
- Unit 8 - Bear Creek left bank below Mosher Creek (BC04)
- Units 25 and 27 - Mosher Creek left bank (BC12)

SYSTEM 6
- Units 24 and 26 - Mosher Creek right bank (BC13)
- Unit 8 - Bear Creek left bank above Mosher Creek (BC05)
- Unit 9 - Paddy Creek left bank (BC14)

SYSTEM 7
- Unit 8 east - Bear Creek left bank above Paddy Cr (BC06)
- Units 10 and 11 - Paddy Creek right bank (BC15)

SYSTEM 8
- Unit 10 east - South Paddy Creek right bank (BC16)
- Unit 12 south - Paddy Creek left bank (BC17)
- Unit 13 - Middle Paddy Creek left bank (BC08)

SYSTEM 9
- Unit 12 north -Paddy Creek above Middle Paddy Creek (BC07)

▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

BEAR CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

APR 23 2012

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Unit 8, west of I-5 system was conducted September 3, 2010. The system is comprised of one segment.

System: Bear Creek - Unit 8, west of I-5
Segment: Bear Creek - Unit 8, Bear Creek left bank west of I-5

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Unit 8, west of I-5 system is rated unacceptable because of unwanted vegetation growth and encroachments (shown in pink on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The unwanted vegetation growth and encroachments along the left bank of the Bear Creek were noted during a previous inspection and corrections were not made in the established timeframe. The vegetation items along the left bank of the Bear Creek should be corrected immediately to at least the Interim Vegetation Criteria described in California's Central Valley Flood System Improvement Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. The encroachments along the left bank of the Bear Creek should be corrected immediately. In order to receive at least a minimally acceptable rating for encroachments along the left bank of the Bear Creek, all structural encroachments must be corrected and at least 50 percent of the remaining encroachments must be removed or properly reviewed and permitted. The Bear Creek - Unit 8, west of I-5 system remains inactive for PL 84-99 rehabilitation assistance.

Animal control was determined to be unacceptable but an engineering determination concluded that it would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). Animal control issues in this system must be completed no later than 2 years from the date of this letter to bring this item to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson at the time of a re-inspection request for this system. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the timeframes specified in the corrective action plan, the Bear Creek - Unit 8, west of I-5 system will not be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition and meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

System 4 Bear Creek - Unit 8, West of I-5 Unacceptable - Inactive	Unit 8, Bear Creek Left Bank West of I-5 (BC18)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	M								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	A								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	M								
Cracking	A								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	N/A								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

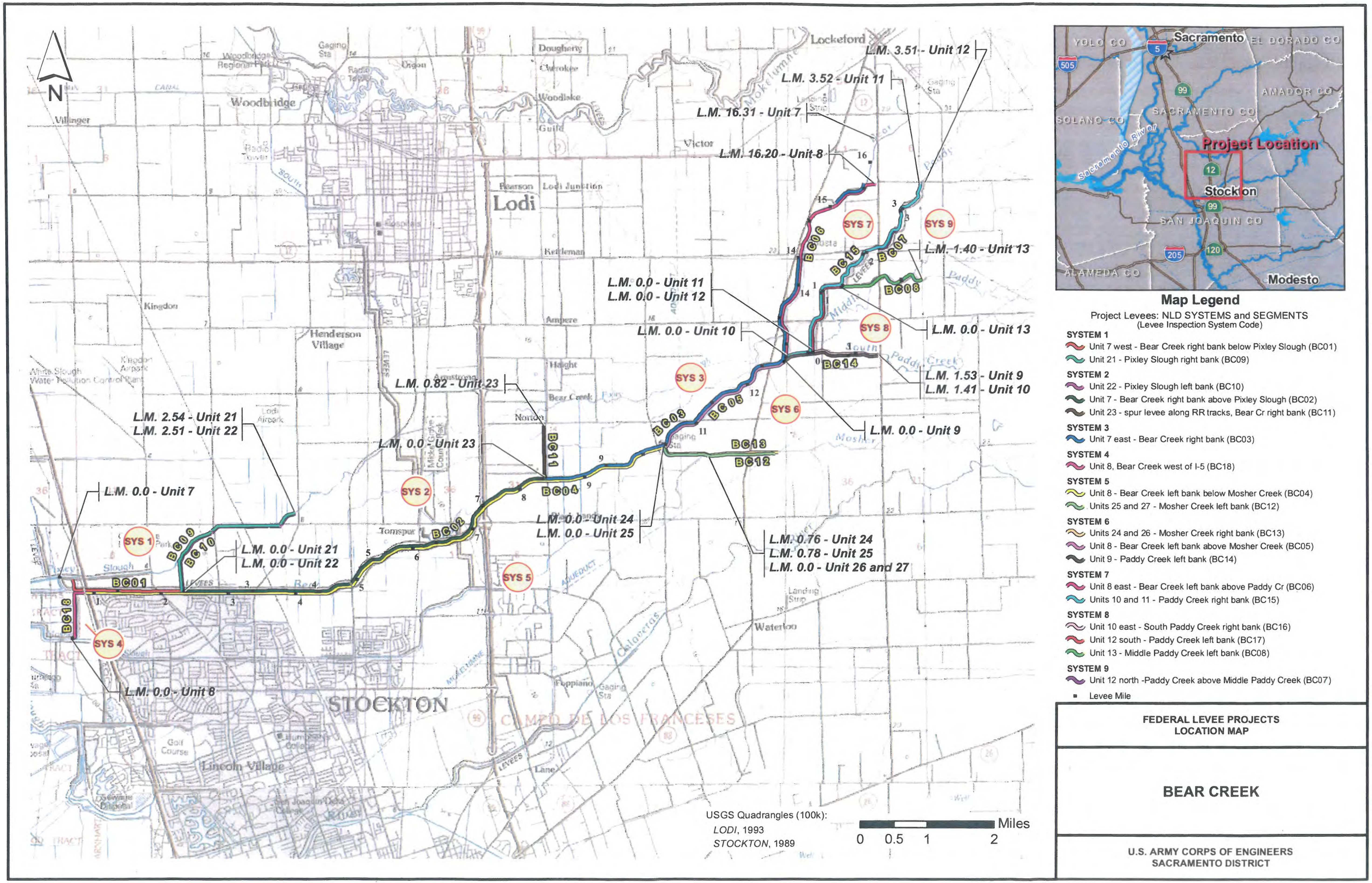
Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

November 29, 2010



FEDERAL LEVEE PROJECTS
LOCATION MAP

BEAR CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 23 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Unit 12 north system was conducted October 6, 2010. The system is comprised of one segment.

System: Bear Creek - Unit 12 north
Segment: Bear Creek - Unit 12 north, Paddy Creek left bank above Middle Paddy Creek

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Unit 12 north system is rated minimally acceptable because of unwanted vegetation growth, encroachments, animal control, and riprap revetments. These items were determined to be unacceptable but an engineering determination concluded they would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation and encroachment maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition. The Bear Creek - Unit 12 north system will remain active for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

We appreciate your interest in continuing to be a part of the PL 84-99 program. If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

for Rick L. Poeppelman, P.E.
Chief, Engineering Division
Levee Safety Officer

Enclosures

System 9 Bear Creek - Unit 12 North Minimally Acceptable - Active	Unit 12 North, Paddy Creek Left Bank Above Middle Paddy Creek (BC07)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	M								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	A								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	A								
Cracking	A								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	U								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

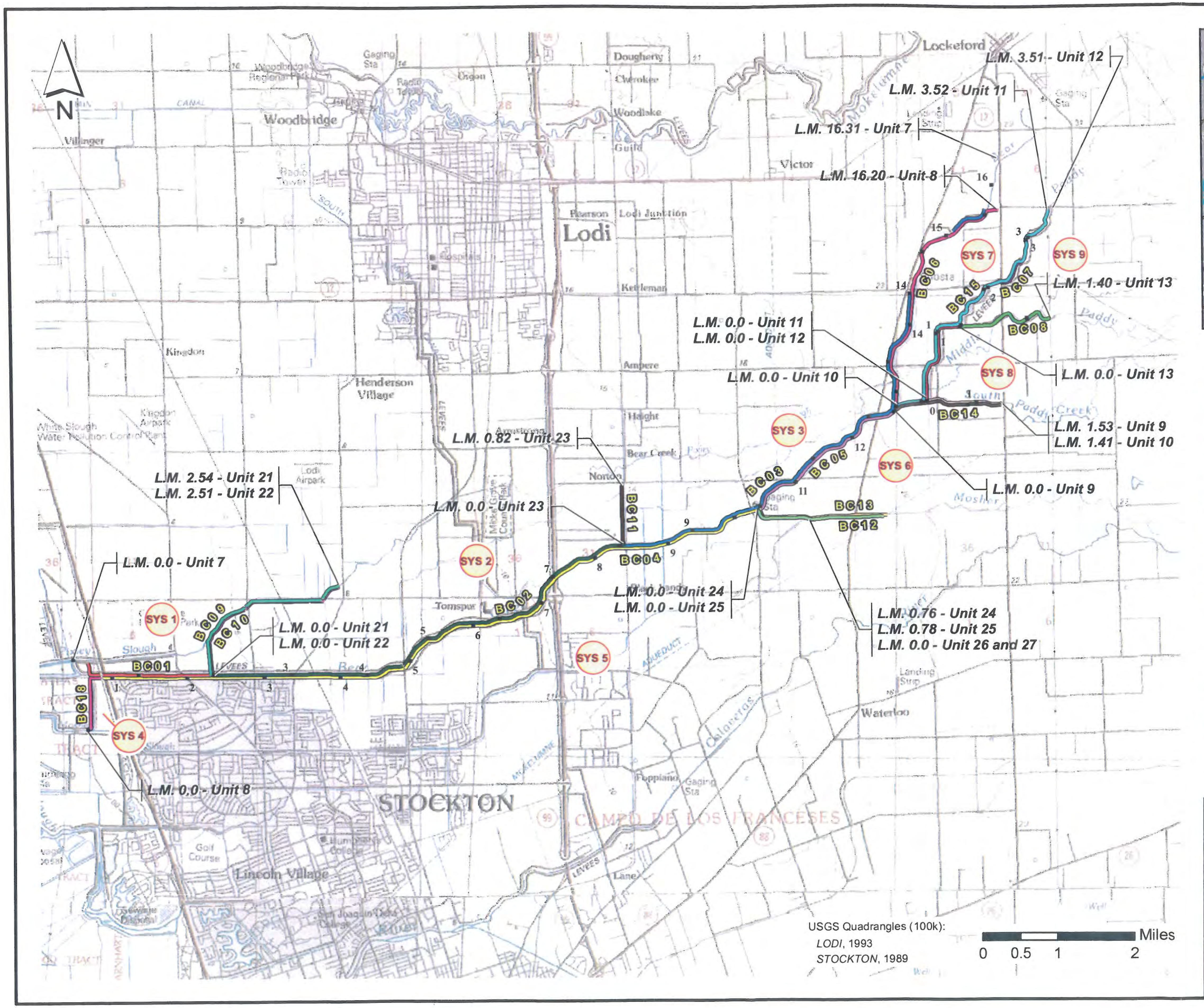
Not Likely to Prevent Performance In Next Flood Event (Framework)

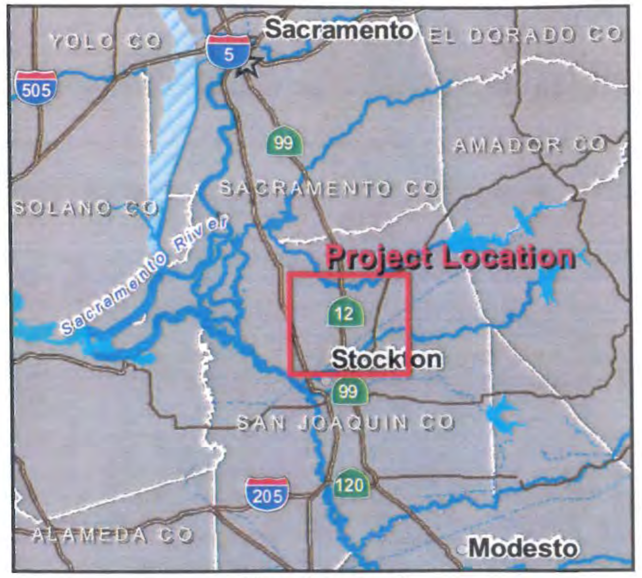
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

November 29, 2010





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- Unit 7 west - Bear Creek right bank below Pixley Slough (BC01)
- Unit 21 - Pixley Slough right bank (BC09)

SYSTEM 2
- Unit 22 - Pixley Slough left bank (BC10)
- Unit 7 - Bear Creek right bank above Pixley Slough (BC02)
- Unit 23 - spur levee along RR tracks, Bear Cr right bank (BC11)

SYSTEM 3
- Unit 7 east - Bear Creek right bank (BC03)

SYSTEM 4
- Unit 8, Bear Creek west of I-5 (BC18)

SYSTEM 5
- Unit 8 - Bear Creek left bank below Mosher Creek (BC04)
- Units 25 and 27 - Mosher Creek left bank (BC12)

SYSTEM 6
- Units 24 and 26 - Mosher Creek right bank (BC13)
- Unit 8 - Bear Creek left bank above Mosher Creek (BC05)
- Unit 9 - Paddy Creek left bank (BC14)

SYSTEM 7
- Unit 8 east - Bear Creek left bank above Paddy Cr (BC06)
- Units 10 and 11 - Paddy Creek right bank (BC15)

SYSTEM 8
- Unit 10 east - South Paddy Creek right bank (BC16)
- Unit 12 south - Paddy Creek left bank (BC17)
- Unit 13 - Middle Paddy Creek left bank (BC08)

SYSTEM 9
- Unit 12 north -Paddy Creek above Middle Paddy Creek (BC07)

▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

BEAR CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 23 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Units 7, 22, and 23 system was conducted between August 30 and September 2, 2010. The system is comprised of three segments.

System: Bear Creek - Units 7, 22, and 23
Segments: Bear Creek - Unit 7, Bear Creek right bank above Pixley Slough
Bear Creek - Unit 22, Pixley Slough left bank
Bear Creek - Unit 23, spur levee along RR tracks, Bear Creek right bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
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U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Units 7, 22, and 23 system is rated unacceptable because of encroachments and erosion/bank caving (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Bear Creek - Units 7, 22, and 23 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, depressions and rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, depressions and rutting, cracking, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Bear Creek - Units 7, 22, and 23 system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 2
Bear Creek - Units 7, 22 and 23
Unacceptable - Active

	Unit 7, Bear Creek Right Bank Above Pixley Slough (BC02)	Unit 22, Pixley Slough Left Bank (BC10)	Unit 23, Spur Levee Along RR Tracks, Bear Creek Right Bank (BC11)						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	M	M	M						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	M	U	N/A						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	M	M	M						
Erosion/Bank Caving	M	U	A						
Settlement	A	A	A						
Depressions/Rutting	U	M	U						
Cracking	U	M	M						
Animal Control	U	U	U						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	U	U	N/A						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

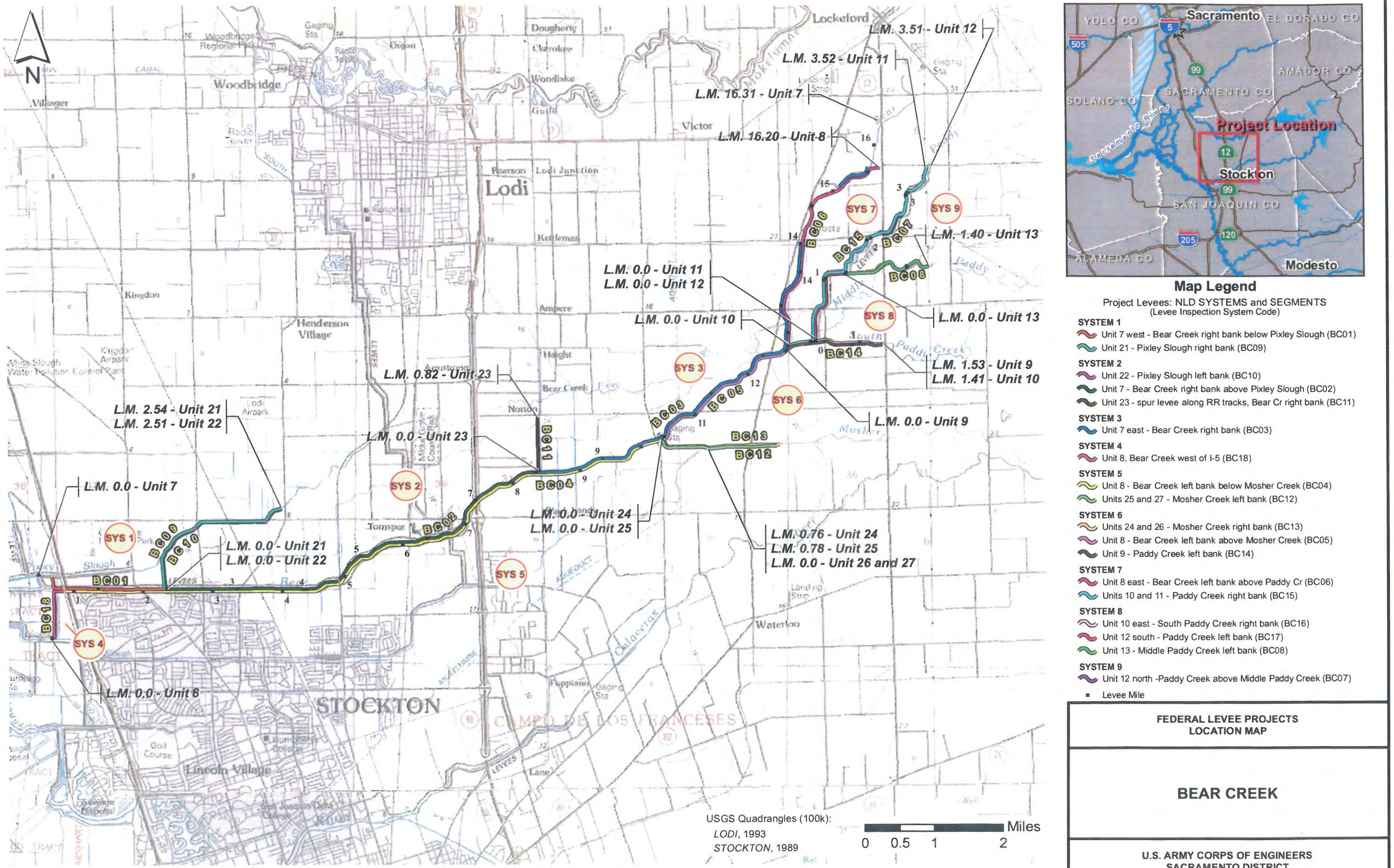
Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

August 4, 2011



FEDERAL LEVEE PROJECTS
LOCATION MAP

BEAR CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

APR 23 2012

Operations and Readiness Branch

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Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

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A Periodic Inspection for the Bear Creek - Units 8, 10, and 11 system was conducted between September 29 and October 1, 2010. The system is comprised of two segments.

System: Bear Creek - Units 8, 10, and 11
Segments: Bear Creek - Unit 8 east, Bear Creek left bank above Paddy Creek
Bear Creek - Units 10 and 11, Paddy Creek right bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

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The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Units 8, 10, and 11 system is rated unacceptable because of encroachments (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that encroachments could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Bear Creek - Units 8, 10, and 11 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, slope stability, depressions and rutting, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, slope stability, depressions and rutting, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Bear Creek - Units 8, 10, and 11 system will no longer be eligible for PL 84-99 rehabilitation assistance.

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Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 7 Bear Creek - Units 8 , 10 and 11 Unacceptable - Active	Unit 8 East, Bear Creek Left Bank Above Paddy Creek (BC06)	Units 10 and 11, Paddy Creek Right Bank (BC15)							
Operations and Maintenance Manuals	M	M							
Emergency Supplies and Equipment	M	M							
Flood Preparedness and Training	M	M							
Unwanted Vegetation Growth	U	U							
Sod Cover	U	U							
Encroachments	U	U							
Closure Structures	N/A	N/A							
Slope Stability	U	M							
Erosion/Bank Caving	M	M							
Settlement	A	A							
Depressions/Rutting	U	U							
Cracking	A	A							
Animal Control	U	U							
Culverts/Discharge Pipes	N/A	N/A							
Riprap Revetments & Bank Protection	U	U							
Revetments other than Riprap	N/A	N/A							
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A							
Seepage	A	A							

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

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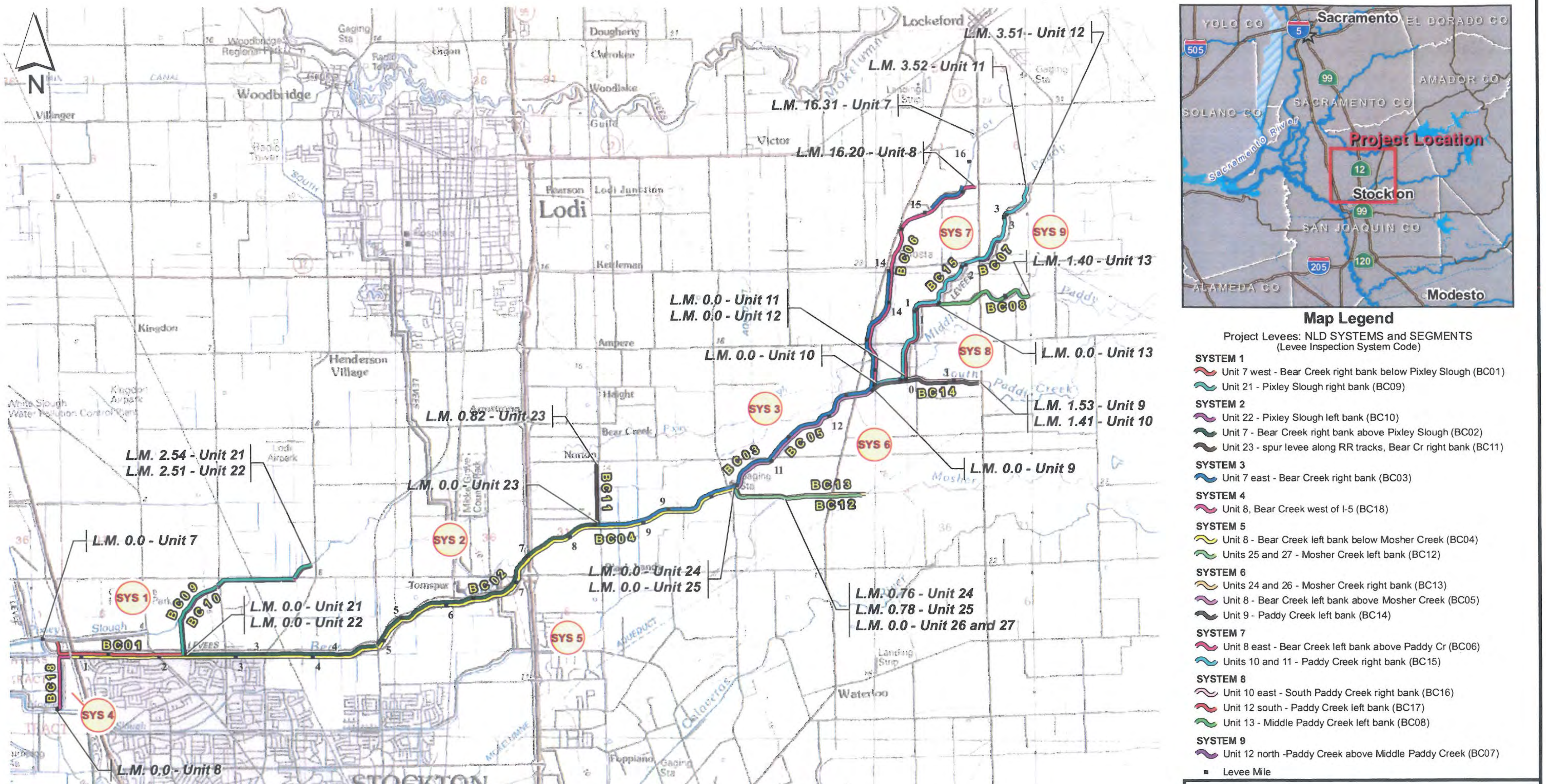
November 1, 2011



FEDERAL LEVEE PROJECTS
LOCATION MAP

BEAR CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 23 2012

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Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Units 8, 24, 26, and 9 system was conducted between September 30 and October 5, 2010. The system is comprised of three segments.

System: Bear Creek - Units 8, 24, 26, and 9
Segments: Bear Creek - Unit 8, Bear Creek left bank above Mosher Creek
Bear Creek - Unit 9, Paddy Creek left bank
Bear Creek - Units 24 and 26, Mosher Creek right bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines

The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.

Based on observations made as part of the inspection, the Bear Creek - Units 8, 24, 26, and 9 system is rated unacceptable because of encroachments (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that encroachments could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Bear Creek - Units 8, 24, 26, and 9 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, depressions and rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, depressions and rutting, cracking, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Bear Creek - Units 8, 24, 26, and 9 system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 6
Bear Creek - Units 8, 24, 26 and 9
Unacceptable - Active

	Unit 8, Bear Creek Left Bank Above Mosher Creek (BC05)	Units 24 and 26, Mosher Creek Right Bank (BC13)	Unit 9, Paddy Creek Left Bank (BC14)						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	M	M	M						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	M	U	U						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	M	M	M						
Erosion/Bank Caving	M	M	M						
Settlement	A	A	A						
Depressions/Rutting	U	U	U						
Cracking	U	U	A						
Animal Control	U	U	U						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	U	A	U						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

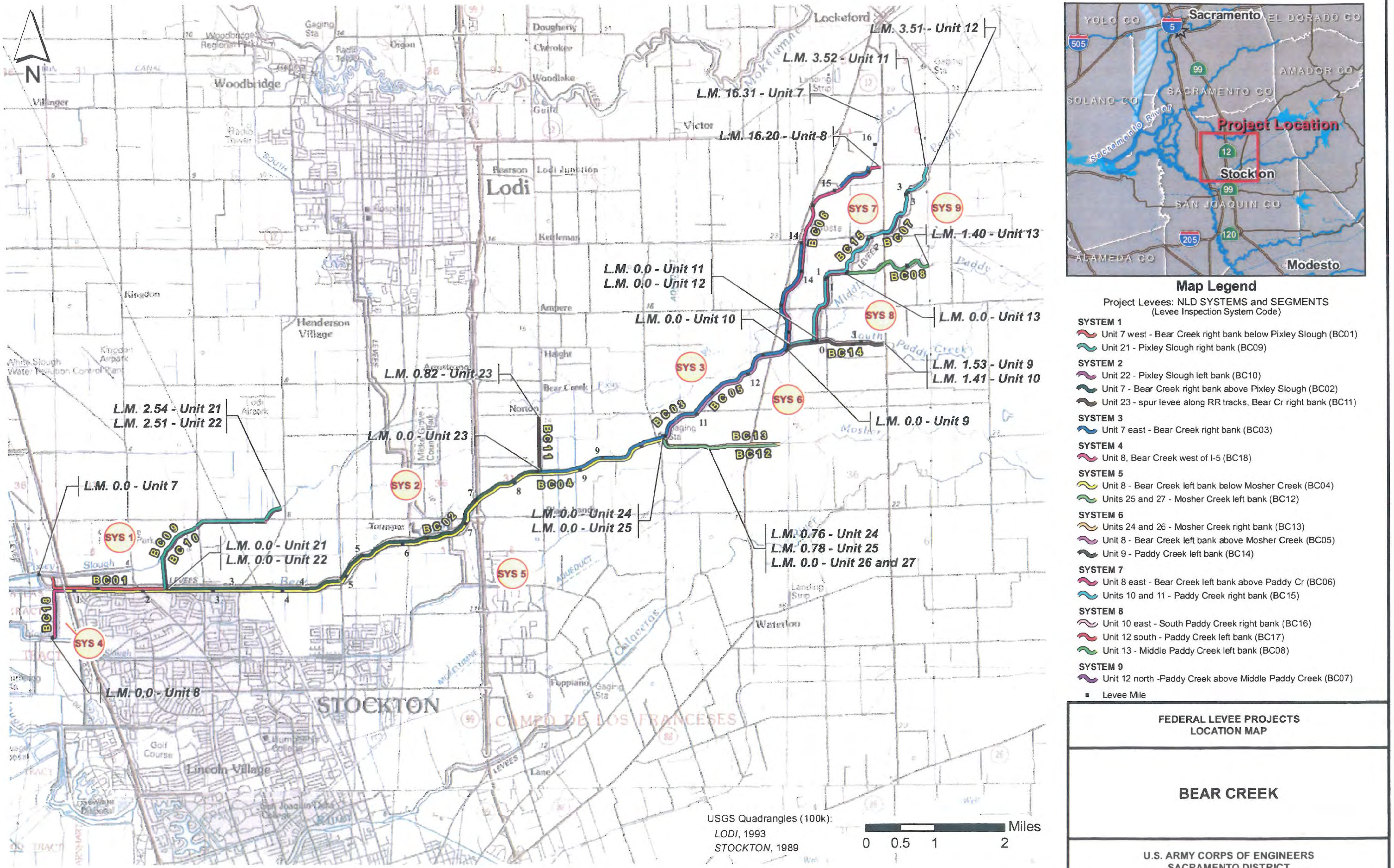
Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

November 1, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- Unit 7 west - Bear Creek right bank below Pixley Slough (BC01)
- Unit 21 - Pixley Slough right bank (BC09)

SYSTEM 2
- Unit 22 - Pixley Slough left bank (BC10)
- Unit 7 - Bear Creek right bank above Pixley Slough (BC02)
- Unit 23 - spur levee along RR tracks, Bear Cr right bank (BC11)

SYSTEM 3
- Unit 7 east - Bear Creek right bank (BC03)

SYSTEM 4
- Unit 8, Bear Creek west of I-5 (BC18)

SYSTEM 5
- Unit 8 - Bear Creek left bank below Mosher Creek (BC04)
- Units 25 and 27 - Mosher Creek left bank (BC12)

SYSTEM 6
- Units 24 and 26 - Mosher Creek right bank (BC13)
- Unit 8 - Bear Creek left bank above Mosher Creek (BC05)
- Unit 9 - Paddy Creek left bank (BC14)

SYSTEM 7
- Unit 8 east - Bear Creek left bank above Paddy Cr (BC06)
- Units 10 and 11 - Paddy Creek right bank (BC15)

SYSTEM 8
- Unit 10 east - South Paddy Creek right bank (BC16)
- Unit 12 south - Paddy Creek left bank (BC17)
- Unit 13 - Middle Paddy Creek left bank (BC08)

SYSTEM 9
- Unit 12 north -Paddy Creek above Middle Paddy Creek (BC07)

▪ Levee Mile

**FEDERAL LEVEE PROJECTS
LOCATION MAP**

BEAR CREEK

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 23 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Bear Creek - Units 8, 25, and 27 system was conducted between September 7 and October 4, 2010. The system is comprised of two segments.

System: Bear Creek - Units 8, 25, and 27
Segments: Bear Creek - Unit 8, Bear Creek left bank below Mosher Creek
Bear Creek - Units 25 and 27, Mosher Creek left bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
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U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Bear Creek - Units 8, 25, and 27 system is rated unacceptable because of encroachments and erosion/bank caving (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Bear Creek - Units 8, 25, and 27 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, depressions and rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Vegetation maintenance should be conducted in accordance with the Framework. Maintenance of the sod cover, depressions and rutting, cracking, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Bear Creek - Units 8, 25, and 27 system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

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If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 5 Bear Creek - Units 8, 25 and 27 Unacceptable - Active	Unit 8, Bear Creek Left Bank Below Mosher Creek (BC04)	Units 25 and 27, Mosher Creek Left Bank (BC12)							
Operations and Maintenance Manuals	M	M							
Emergency Supplies and Equipment	M	M							
Flood Preparedness and Training	M	M							
Unwanted Vegetation Growth	U	U							
Sod Cover	U	U							
Encroachments	U	U							
Closure Structures	N/A	N/A							
Slope Stability	M	M							
Erosion/Bank Caving	M	U							
Settlement	A	A							
Depressions/Rutting	U	U							
Cracking	U	U							
Animal Control	U	U							
Culverts/Discharge Pipes	N/A	N/A							
Riprap Revetments & Bank Protection	U	A							
Revetments other than Riprap	N/A	N/A							
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A							
Seepage	A	A							

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

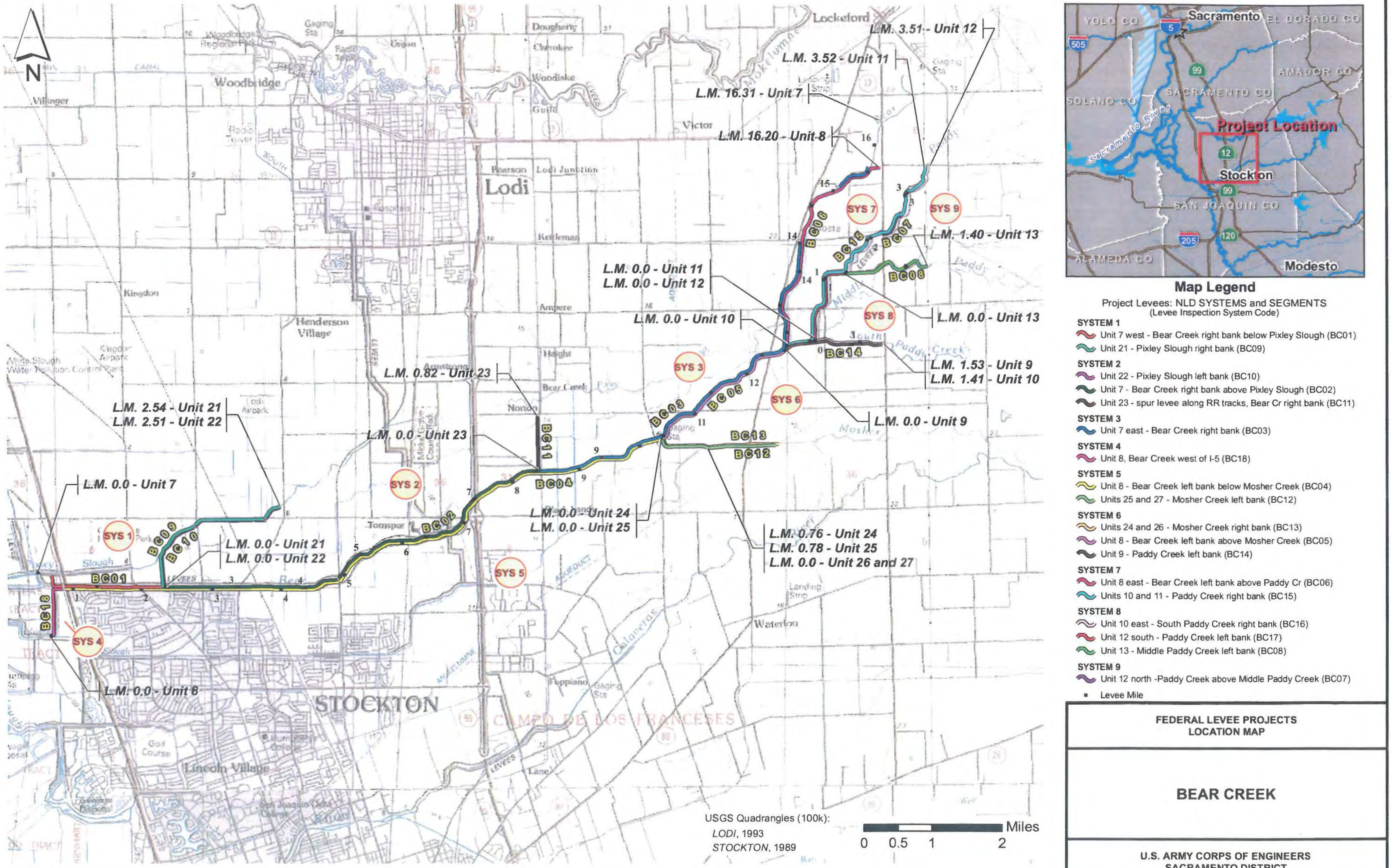
Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

November 29, 2010



**FEDERAL LEVEE PROJECTS
LOCATION MAP**

BEAR CREEK

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

JUL 31 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Merced Stream Group – Black Rascal – Unit 1 Levee System on January 23, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Merced Stream Group – Black Rascal – Unit 1 Levee System is rated Unacceptable. The unacceptable rating is due to animal control. An engineering determination, based upon visual inspection, concluded that this issue is likely to prevent the system from performing as intended during the next flood event. This issue should be addressed immediately (shown in red on the Report Card).

Encroachments and vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Merced Stream Group – Black Rascal – Unit 1 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Merced Stream Group - Black Rascal - Unit 1 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Merced County Stream Group - Black Rascal Diverting Canal right bank, Unit 1 (MGB1)
General	Operations and Maintenance Manuals	A
	Emergency Supplies and Equipment	A
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M
	Closure Structures	N/A
	Slope Stability	M
	Erosion/Bank Caving	A
	Animal Control	U
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	A
	Settlement	A
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	A

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

August 28,.2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

JUL 31 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Merced Stream Group – Black Rascal – Unit 2 Levee System on January 22-23, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Merced Stream Group – Black Rascal – Unit 2 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Erosion/bank caving, vegetation growth, settlement, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Merced Stream Group – Black Rascal – Unit 2 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

M J Farrell

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Merced Stream Group - Black Rascal - Unit 2 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Merced County Stream Group - Black Rascal Diverting Canal left bank, Unit 2 (MGB2)
General	Operations and Maintenance Manuals	A
	Emergency Supplies and Equipment	A
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U
	Closure Structures	N/A
	Slope Stability	M
	Erosion/Bank Caving	M
	Animal Control	U
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	M
	Settlement	M
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	A

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

August 28, 2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

MAR 26 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum, and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Brannan-Andrus LMD - RD 0556 system was conducted between January 17, 2011 and January 31, 2011. The system is comprised of four segments.

System: Brannan-Andrus LMD - RD 0556
Segments: Brannan-Andrus LMD - Unit 1, Georgiana Slough
Brannan-Andrus LMD - Unit 2, Sacramento River
RD 0556-Upper Andrus - Unit 1, Georgiana Slough
RD 0556-Upper Andrus - Unit 2, Sacramento River

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Brannan-Andrus LMD - RD 0556 system is rated unacceptable because of sod cover, encroachments, slope stability, erosion/bank caving, depressions/rutting, cracking, animal control and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These items should be addressed immediately.

Vegetation, settlement and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting an encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system is ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

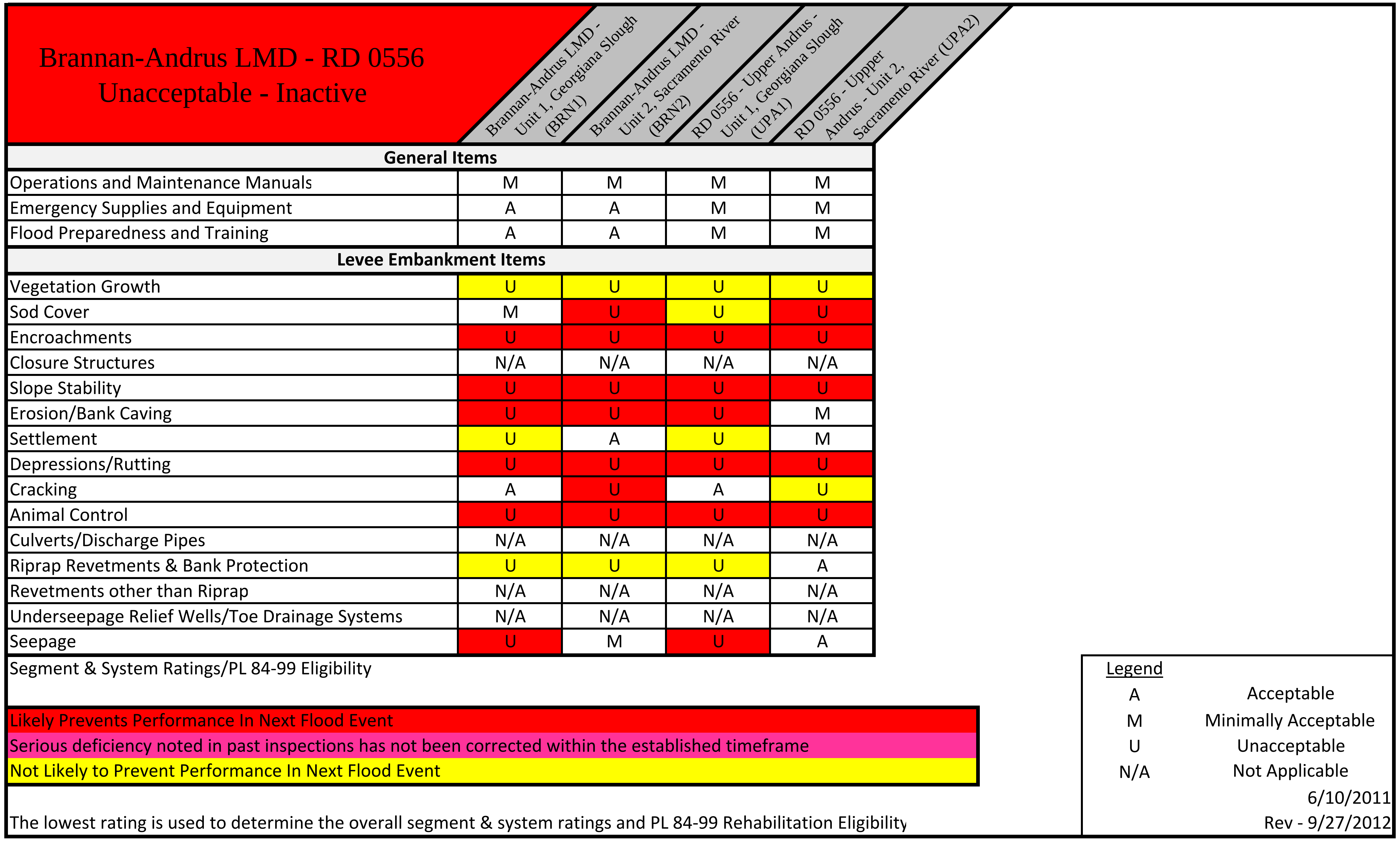
This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures



Brannan-Andrus LMD - RD 0556
Unacceptable - Inactive

	Brannan-Andrus LMD - Unit 1, Georgiana Slough (BRN1)	Brannan-Andrus LMD - Unit 2, Sacramento River (BRN2)	RD 0556 - Upper Andrus - Unit 1, Georgiana Slough (UPA1)	RD 0556 - Uppper Andrus - Unit 2, Sacramento River (UPA2)
General Items				
Operations and Maintenance Manuals	M	M	M	M
Emergency Supplies and Equipment	A	A	M	M
Flood Preparedness and Training	A	A	M	M
Levee Embankment Items				
Vegetation Growth	🟨 U	🟨 U	🟨 U	🟨 U
Sod Cover	M	🟥 U	🟨 U	🟥 U
Encroachments	🟥 U	🟥 U	🟥 U	🟥 U
Closure Structures	N/A	N/A	N/A	N/A
Slope Stability	🟥 U	🟥 U	🟥 U	🟥 U
Erosion/Bank Caving	🟥 U	🟥 U	🟥 U	M
Settlement	🟨 U	A	🟨 U	M
Depressions/Rutting	🟥 U	🟥 U	🟥 U	🟥 U
Cracking	A	🟥 U	A	🟨 U
Animal Control	🟥 U	🟥 U	🟥 U	🟥 U
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A
Riprap Revetments & Bank Protection	🟨 U	🟨 U	🟨 U	A
Revetments other than Riprap	N/A	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A
Seepage	🟥 U	M	🟥 U	A

Segment & System Ratings/PL 84-99 Eligibility

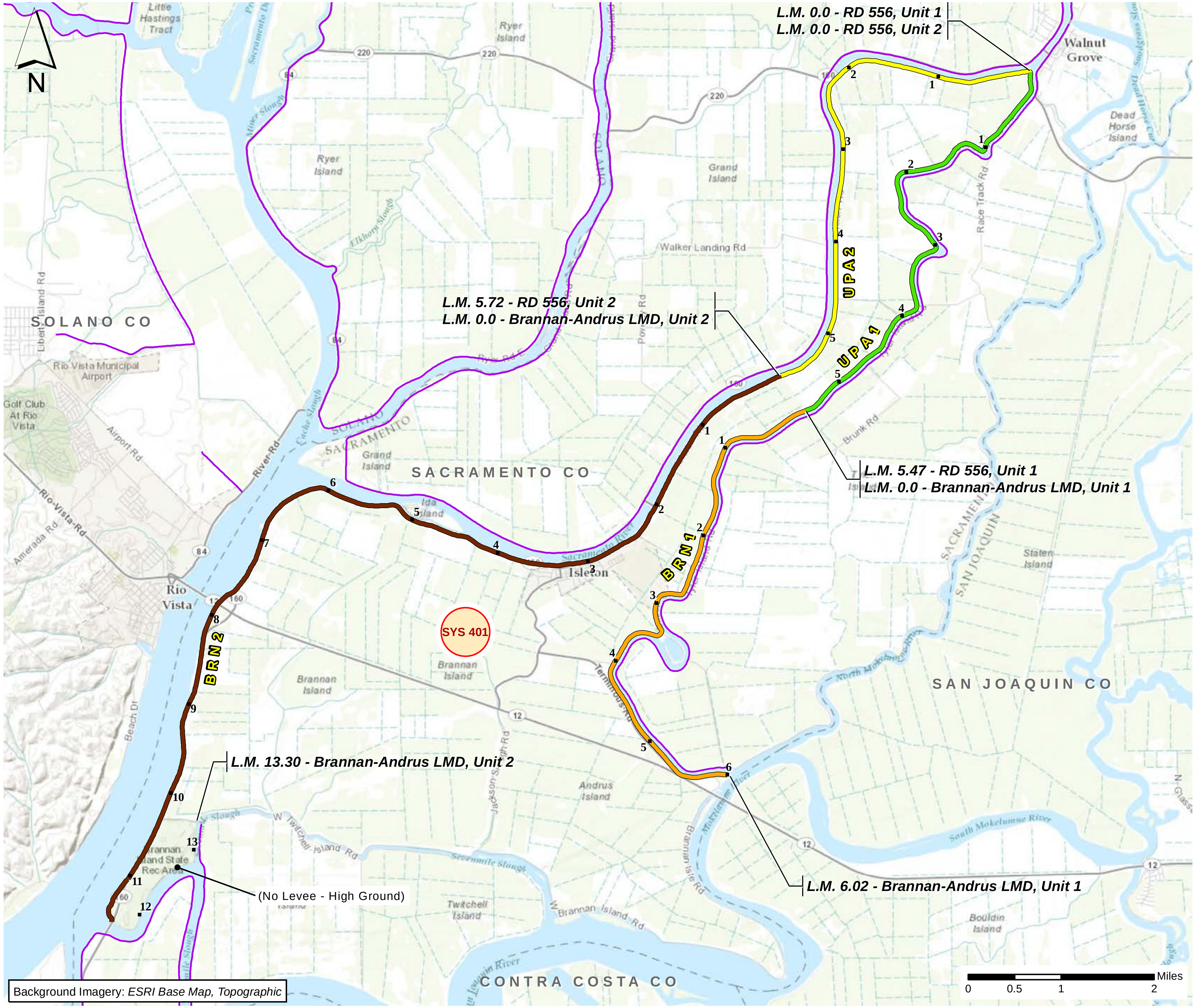
🟥 Likely Prevents Performance In Next Flood Event
🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe
🟨 Not Likely to Prevent Performance In Next Flood Event

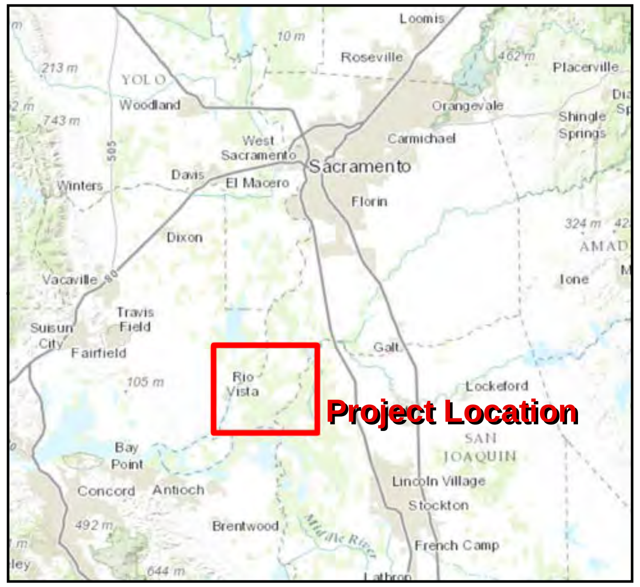
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

6/10/2011
Rev - 9/27/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 401

- Brannan-Andrus LMD - Unit 1 (BRN1)
- Brannan-Andrus LMD - Unit 2 (BRN2)
- RD 0556 - Upper Andrus - Unit 1 (UPA1)
- RD 0556 - Upper Andrus - Unit 2 (UPA2)
- Federal Levee
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

BRANNAN-ANDRUS LMD
AND RD 556

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

APR 2013

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Brannan-Andrus LMD – RD 0556 Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Brannan-Andrus LMD – RD 0556 Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000401
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Brannan-Andrus LMD – Unit 1, Georgiana Slough (BRN1)</td><td>5204000401</td><td>U</td></tr>
<tr><td>Brannan-Andrus LMD – Unit 2, Sacramento River (BRN2)</td><td>5204000402</td><td>U</td></tr>
<tr><td>RD 556 – Upper Andrus – Unit 1, Georgiana Slough (UPA1)</td><td>5204000791</td><td>U</td></tr>
<tr><td>RD 556 – Upper Andrus – Unit 2, Sacramento River (UPA2)</td><td>5204000792</td><td>U</td></tr>
</table>
</td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
</table>

USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive
Preparing Contractor Name and Address	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosures 1 through 4, Appendices C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosures 1 through 4, Appendices C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor. It should be noted that there are no flood risk reduction features that are a part of the RIP on the southern portion of Brannan Andrus Island along Seven Mile Slough and the Mokelumne River, and therefore this area is not included in the inspection findings,.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 10 2010

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the City of Marysville - Unit 3, NE extension system was conducted on January 7, 2010. The system is comprised of one segment.

Segment Name
City of Marysville - Unit 3, NE extension

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. Based on observations made as part of the inspection, the City of Marysville - Unit 3, NE extension system is rated unacceptable because of unwanted vegetation growth. This item should be corrected immediately to at least the Interim Vegetation Criteria described in California's Central Valley Flood System Improvement Framework. This item was observed during a previous inspection and corrections were not made in the established timeframe. The City of Marysville - Unit 3, NE extension system remains inactive for PL 84-99 rehabilitation assistance.

The encroachment item was determined to be unacceptable but an engineering determination concluded that this item would <u>not</u> prevent the system from performing as intended during the next flood event. Inspections of pipes over, under, or through the flood risk reduction system should have an inspection completed by October 31, 2011. All other encroachment maintenance should be completed no later than 2 years from the date of this letter to bring this item to at least a minimally acceptable condition. If the required repairs are not made within the timelines specified, the system will be rated unacceptable for encroachments.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection the issuing of the permit *and* 3) it was constructed and is being maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition and meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the Corps to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted by October 31, 2011, or any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a

levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman Walter Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

City of Marysville – Unit 3, NE extension Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

Project Name	City of Marysville – Unit 3, NE extension Levee System
National Levee Database (NLD) System Identification	NLD System ID: 5205000431
USACE Division/District	South Pacific Division / Sacramento District
USACE Assigned System Rating *	Assigned Rating: Unacceptable
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive
Preparing Contractor Name and Address	Genterra Consultants, Inc. 15375 Barranca Parkway, Suite K-102 Irvine, California 92618

Segment Name	NLD Segment ID	Segment Rating
City of Marysville – Unit 3, NE extension	5204000433	U

* System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may

have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items* rated "unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner. Inactive Systems are ineligible for rehabilitation assistance.
*Refer to Appendix C.

The Periodic Inspection has also identified Items* rated "unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
*Refer to Appendix C.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Michael Mahoney, P.E.
Levee Safety Officer

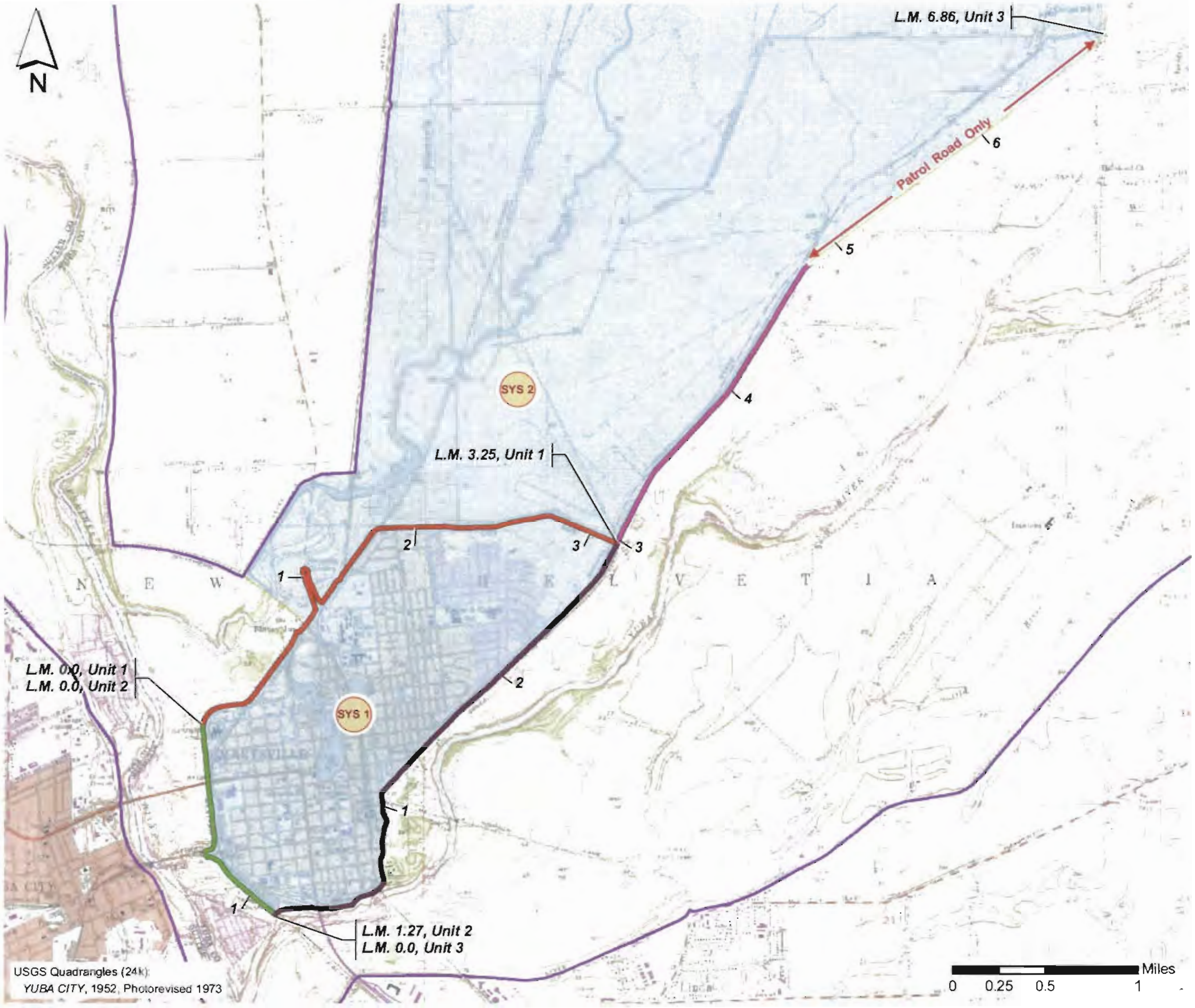
cc:

CO-E

CO-OR

ED

ED-G



USGS Quadrangles (24k):
YUBA CITY, 1952, Photorevised 1973

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1
- Unit 1 - Jack Slough (MRY1 - 3.21)
- Unit 2 - Feather River (MRY2 - 1.24)
- Unit 3 - Yuba River (MRY3 - 2.99)

SYSTEM 2
- Unit 3 - NE extension (MRY4 - 1.83)

- Other Federal Levees

- Protection Area

FEDERAL LEVEE PROJECTS
LOCATION MAP

CITY OF MARYSVILLE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

City of Marysville Unit 3, NE Extension Unacceptable-Inactive	Unit 3, NE Extension								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	A								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	A								
Encroachments	U								
Closure Structures	NA								
Slope Stability	A								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	A								
Cracking	A								
Animal Control	M								
Culverts/Discharge Pipes	NA								
Riprap Revetments & Bank Protection	NA								
Revetments other than Riprap	NA								
Underseepage Relief Wells/Toe Drainage Systems	NA								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

OCT 18 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Interceptor Canal – West Levee System from June 6-7, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Interceptor Canal – West Levee System is rated unacceptable because of encroachments and erosion/bank caving (shown in red on the Report Card). Red issues cause the system to become inactive immediately. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items are <u>not</u> likely to prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 rehabilitation program. Based on the information available at this time, the system has an inactive status in the PL 84-99 rehabilitation program and is no longer eligible for assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sutter County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell for
Colonel, U.S. Army
District Commander

[illegible]
LTC for
Deputy Cdr

Enclosures

Interceptor Canal - West
Levee System
Unacceptable - Inactive

	Interceptor Canal - Unit 1, West Canal (INT1)
General Items	
Operations and Maintenance Manuals	M
Emergency Supplies and Equipment	A
Flood Preparedness and Training	M
Levee Embankment Items	
Unwanted Vegetation Growth	U
Sod Cover	U
Encroachments	U
Closure Structures	N/A
Slope Stability	A
Erosion/Bank Caving	U
Settlement	A
Depressions/Rutting	A
Cracking	M
Animal Control	U
Culverts/Discharge Pipes	N/A
Riprap Revetments & Bank Protection	U
Revetments other than Riprap	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A
Seepage	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

August 8, 2012

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Interceptor Canal – West Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Interceptor Canal – West Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205001090
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Interceptor Canal – Unit 1, West Canal (INT1)</td><td>5204000501</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Agency Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendices C.2 for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting.
Refer to Appendices C.2 for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-571.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick P. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

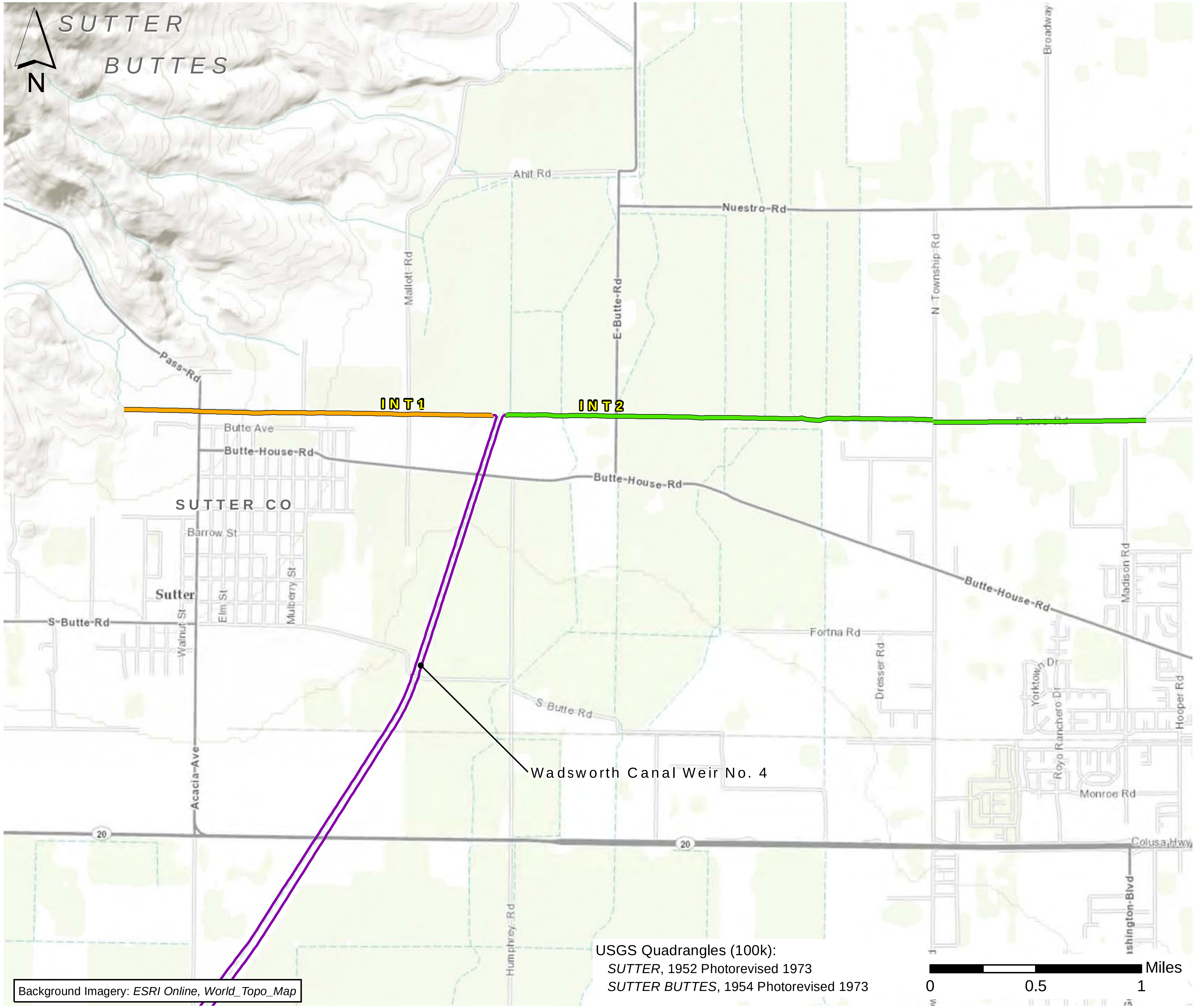
cc:

CO-E

CO-OR

ED

ED-G



USGS Quadrangles (100k):
SUTTER, 1952 Photorevised 1973
SUTTER BUTTES, 1954 Photorevised 1973

Background Imagery: *ESRI Online, World_Topo_Map*

Map Legend

Levee Segments (Levee Inspection System Code)

- Interceptor Canal - Unit 1, west canal (INT1)
- Interceptor Canal - Unit 2, east canal (INT2)
- Other Federal Levee

FEDERAL LEVEE PROJECTS
SYSTEM MAP

INTERCEPTOR CANAL
SACRAMENTO RIVER FCP - UNIT 135

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

FEB 2012

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 16 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Ash Slough Right Bank Levee System on February 20, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one federally authorized segment listed in the Report Card. The report also contains information about other levees of the Lower San Joaquin Levee District (LSJLD) which, we determined in the course of writing this report, are not federally authorized levees. The LSJLD inspection information contained in this report is for your information as you consider flood risk reduction efforts in this area.

Based on observations made as part of the inspection, the Ash Slough Right Bank Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, depressions/rutting, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our March 20, 2013, inspection report for the same levee segment that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified in this report for the first time are shown in yellow on the Report Card. Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Ash Slough right bank Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating.

The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Madera County Office of Emergency Services, Merced County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Ash Slough right bank System Rating:Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	Chowchilla River - Ash Slough right bank (CHW1)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	U							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankment - Other Items	Vegetation Growth	U							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	U							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Not likely to prevent performance in next flood event / Active
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive
U	Likely prevents performance in next flood event / Inactive

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 16 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Ash Slough Left Bank – Berenda Slough Right Bank Levee System on March 19-20, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two federally authorized segments listed in the Report Card. The report also contains information about other levees of the Lower San Joaquin Levee District (LSJLD) which, we determined in the course of writing this report, are not federally authorized levees. The LSJLD inspection information contained in this report is for your information as you consider flood risk reduction efforts in this area.

Based on observations made as part of the inspection, the Ash Slough Left Bank – Berenda Slough Right Bank Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, settlement, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our March 26, 2013, inspection report for the same levee segment that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified in this report for the first time are shown in yellow on the Report Card. Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Ash Slough Left Bank – Berenda Slough Right Bank Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: Ash Slough left bank - Berenda Slough right bank
System Rating: Unacceptable
Approved SWIF/LOI: No
PL 84-99 RP Eligibility: Inactive

		Chowchilla River - Ash Slough left bank (CHW2)	Chowchilla River - Berenda Slough right bank (CHW3)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U	🟥 U						
	Closure Structures	NA	NA						
	Slope Stability	A	A						
	Erosion/Bank Caving	🟥 U	🟥 U						
	Animal Control	🟥 U	🟥 U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	🟪 U	🟪 U						
	Sod Cover	🟨 U	🟨 U						
	Settlement	🟨 U	🟨 U						
	Depressions/Rutting	🟨 U	🟨 U						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	M	M						
	Revetments other than Riprap	M	NA						
	Seepage	A	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 U	Not likely to prevent performance in next flood event / Active
🟪 U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive
🟥 U	Likely prevents performance in next flood event / Inactive

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 16 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Berenda Slough Left Bank – Fresno River right bank Levee System on February 18-20, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two federally authorized segments listed in the Report Card. The report also contains information about other levees of the Lower San Joaquin Levee District (LSJLD) which, we determined in the course of writing this report, are not federally authorized levees. The LSJLD inspection information contained in this report is for your information as you consider flood risk reduction efforts in this area.

Based on observations made as part of the inspection, the Berenda Slough Left Bank – Fresno River Right Bank Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, settlement, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our March 20, 2013, inspection report for the same levee segments that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified in this report for the first time are shown in yellow on the Report Card. Correction of any yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Berenda Slough Left Bank – Fresno River Right Bank Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents

USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Madera County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Berenda Slough left bank - Fresno River right bank System Rating:Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	Chowchilla River - Berenda Slough left bank (CHW4)	Fresno River - right bank (FRN1)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	M	M						
	Erosion/Bank Caving	U	U						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankment - Other Items	Vegetation Growth	U	U						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	U	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	NA	M						
	Revetments other than Riprap	NA	M						
	Seepage	M	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Not likely to prevent performance in next flood event / Active
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive
U	Likely prevents performance in next flood event / Inactive

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

JUN 20 2014

REPLY TO
ATTENTION OF
Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Cache Creek – RD 2035 – Willow Bypass Levee System from December 18, 2012 – January 3, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of five segments listed in the Report Card.

Based on observations made as part of the inspection, the Cache Creek – RD 2035 – Willow Bypass Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, settlement, depressions/rutting, cracking, and seepage. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation and riprap revetments observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are Minimally Acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items and system will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Cache Creek – RD 2035 – Willow Bypass Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell for
Colonel, U.S. Army
District Commander

BRADEN LEMASTER
LTC, EN
DEPUTY COMMANDER

Enclosures

	System: Cache Creek - RD 2035 - Willow Bypass Levee System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Cache Creek - Right Bank, Yolo County Public Works (CCKY)	Cache Creek - Unit 2, Right Bank (CCK2)	RD 2035 - Conaway - Unit 2, Yolo Bypass (CON2)	RD 2035 - Conaway - Unit 3, Willow Bypass (CON3)	Willow Slough Bypass - Unit 1, Left Bank (WBP1)			
General	Operations and Maintenance Manuals	A	M	A	A	A			
	Emergency Supplies and Equipment	M	A	M	M	A			
	Flood Preparedness and Training	M	M	M	M	M			
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U			
	Closure Structures	N/A	N/A	N/A	N/A	N/A			
	Slope Stability	M	🟨 M	🟥 U	A	🟥 U			
	Erosion/Bank Caving	A	M	🟥 U	A	A			
	Animal Control	🟥 U	M	M	M	🟥 U			
	Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A			
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A			
Levee Embankments - Other Items	Vegetation Growth	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M			
	Sod Cover	🟨 M	🟥 U	🟨 M	A	🟨 M			
	Settlement	🟥 U	🟨 M	🟨 M	M	🟨 M			
	Depressions/Rutting	🟥 U	🟨 M	🟨 M	M	🟨 M			
	Cracking	🟨 M	M	🟨 M	A	🟥 U			
	Riprap Revetments & Bank Protection	A	A	🟨 M	A	M			
	Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A			
	Seepage	A	🟥 U	M	M	M			

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
🟪 U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUN 20 2014

Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System from December 12-18, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, depressions/rutting, and cracking. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation, sod cover, settlement, and riprap revetments observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are Minimally Acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items and system will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell For
Colonel, U.S. Army
District Commander

BRADEN LEMASTER
LTC, EN
DEPUTY COMMANDER

Enclosures

	System: Cache Creek U1 - Yolo Bypass U2 - Knights Landing U1 System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Knights Landing Ridge Cut - Unit 1, Right Bank (KNT1)	Yolo Bypass - West Levee - Unit 2 (YBW2)	Cache Creek - Unit 1, Left Bank (CCK1)					
General	Operations and Maintenance Manuals	A	M	M					
	Emergency Supplies and Equipment	A	A	A					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	U	A	M					
	Erosion/Bank Caving	U	M	U					
	Animal Control	U	M	M					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	M	M	M					
	Sod Cover	M	M	M					
	Settlement	M	M	M					
	Depressions/Rutting	U	A	M					
	Cracking	U	M	M					
	Riprap Revetments & Bank Protection	A	M	A					
	Revetments other than Riprap	NA	NA	A					
	Seepage	M	M	M					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 16 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Fresno River Left Bank Levee System on March 21-25, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one federally authorized segment listed in the Report Card. The report also contains information about other levees of the Lower San Joaquin Levee District (LSJLD) which, we determined in the course of writing this report, are not federally authorized levees. The LSJLD inspection information contained in this report is for your information as you consider flood risk reduction efforts in this area.

Based on observations made as part of the inspection, the Fresno River Left Bank Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, depressions/rutting, and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. Unacceptable observations identified in our March 15, 2013, inspection report for the same levee segment have not been corrected, therefore the item rating remains unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Fresno River Left Bank Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Madera County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: Fresno River left bank
System Rating: Unacceptable
Approved SWIF/LOI: No
PL 84-99 RP Eligibility: Inactive

		Fresno River left bank (FRN2)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U							
	Closure Structures	NA							
	Slope Stability	🟥 U							
	Erosion/Bank Caving	🟥 U							
	Animal Control	🟥 U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	🟪 U							
	Sod Cover	🟥 U							
	Settlement	M							
	Depressions/Rutting	🟥 U							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	🟥 U							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 U	Not likely to prevent performance in next flood event / Active
🟪 U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive
🟥 U	Likely prevents performance in next flood event / Inactive

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

JUN 20 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Yolo Bypass West Levee – Cache Creek Unit 4 Levee System from December 20 – 21, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Yolo Bypass West Levee – Cache Creek Unit 4 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event (shown in red on the Report Card).

Erosion/bank caving, depressions/rutting, cracking, and riprap revetments observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are Minimally Acceptable (shown in yellow on attached Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items and system will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Yolo Bypass West Levee – Cache Creek Unit 4 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell For BRADEN LEMBERGER
Colonel, U.S. Army LTC, EN
District Commander DEPUTY COMMANDER

Enclosures

System: Yolo Bypass West Levee - Cache Creek Unit 4 Levee
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		Cache Creek - Unit 4, Channel Levee Left Bank (CCK4)	Yolo Bypass - West Levee - Unit 3 (YBW3)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M	U						
	Closure Structures	N/A	N/A						
	Slope Stability	A	A						
	Erosion/Bank Caving	M	M						
	Animal Control	U	M						
	Culverts/Discharge Pipes	N/A	N/A						
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A						
Levee Embankments - Other Items	Vegetation Growth	A	A						
	Sod Cover	A	A						
	Settlement	A	A						
	Depressions/Rutting	M	A						
	Cracking	A	M						
	Riprap Revetments & Bank Protection	N/A	M						
	Revetments other than Riprap	N/A	N/A						
	Seepage	A	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

OCT 18 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Wadsworth Canal Right Bank – Sutter Bypass East Levee System from June 4-6, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Wadsworth Canal Right Bank – Sutter Bypass East Levee System is rated unacceptable because of encroachments, erosion/bank caving, animal control and culverts/discharge pipes (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, depression/rutting, cracking, riprap revetments and pump station were determined to be unacceptable but an engineering determination concluded that these items are not likely to prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 rehabilitation program. Based on the information available at this time, the system has an inactive status in the PL 84-99 rehabilitation program and is no longer eligible for assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sutter County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell For
Colonel, U.S. Army
District Commander

BRADEN LEMASTER
LTC EN
DPTY CDR

Enclosures

Wadsworth Canal Right Bank - Sutter Bypass East Levee System Unacceptable - Inactive

	Sutter Bypass - East Levee - North of Wadsworth Canal (SBP1)	Wadsworth Canal - Unit 2, Right Bank (WAD2)
General Items		
Operations and Maintenance Manuals	M	M
Emergency Supplies and Equipment	A	A
Flood Preparedness and Training	M	M
Levee Embankment Items		
Unwanted Vegetation Growth	🟨 U	🟨 U
Sod Cover	🟨 U	🟨 U
Encroachments	🟥 U	🟥 U
Closure Structures	N/A	N/A
Slope Stability	M	A
Erosion/Bank Caving	M	🟥 U
Settlement	A	A
Depressions/Rutting	🟨 U	🟨 U
Cracking	🟨 U	🟨 U
Animal Control	🟥 U	🟥 U
Culverts/Discharge Pipes	🟥 U	N/A
Riprap Revetments & Bank Protection	🟨 U	🟨 U
Revetments other than Riprap	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A
Seepage	M	M
Pump Station	🟨 U	N/A

Segment & System Ratings/PL 84-99 Eligibility

🟥 Likely Prevents Performance In Next Flood Event
🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe
🟨 Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

August 8, 2012

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Wadsworth Canal Right Bank – Sutter Bypass East Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation’s flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Wadsworth Canal Right Bank – Sutter Bypass East Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205001091
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Sutter Bypass – East Levee – North of Wadsworth Canal (SBP1)</td><td>5204001071</td><td>U</td></tr>
<tr><td>Wadsworth Canal – Unit 2, Right Bank(WAD2)</td><td>5204001092</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Agency Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendices C.1 for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting.
Refer to Appendices C.1 for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-571.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick P. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

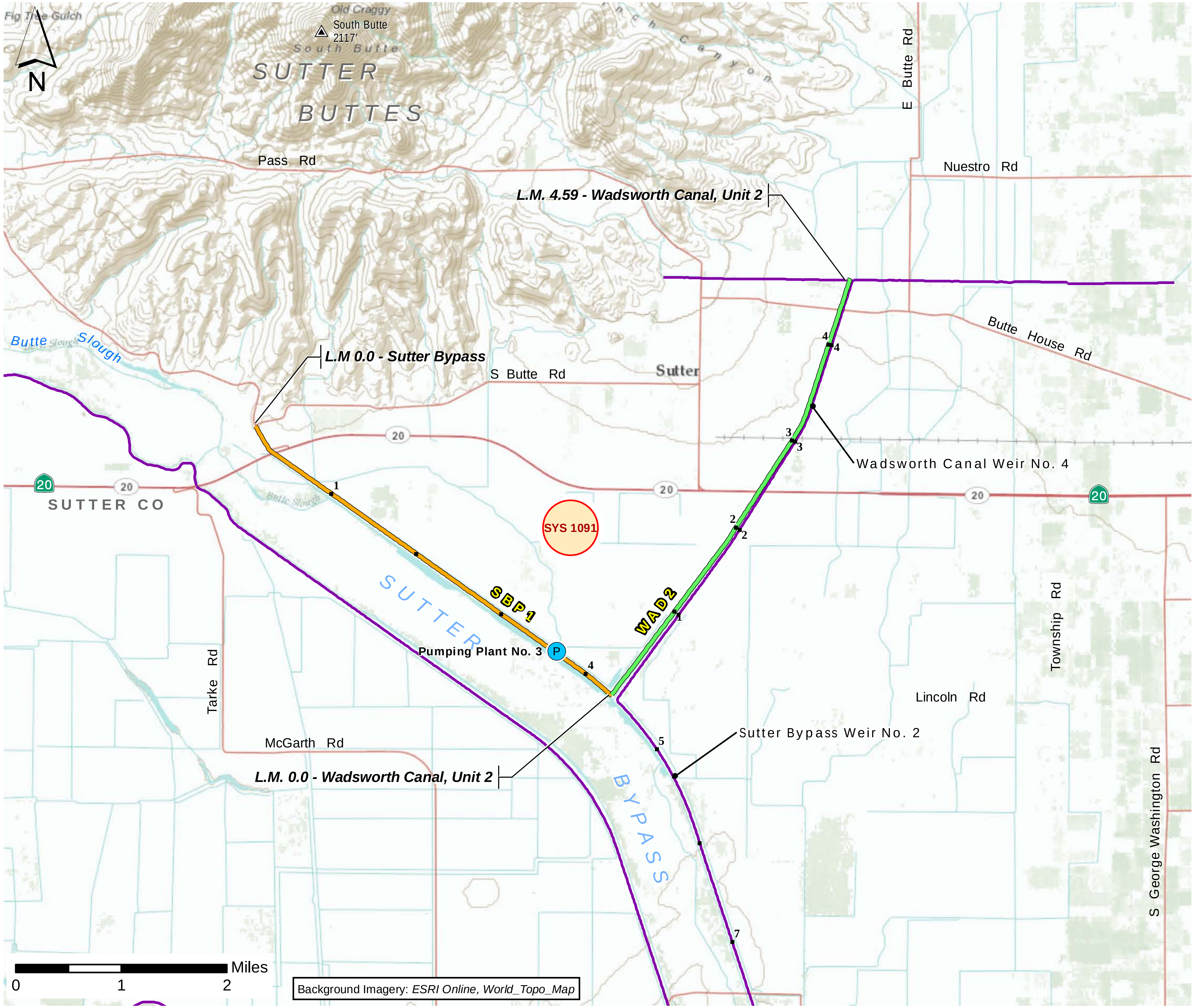
cc:

CO-E

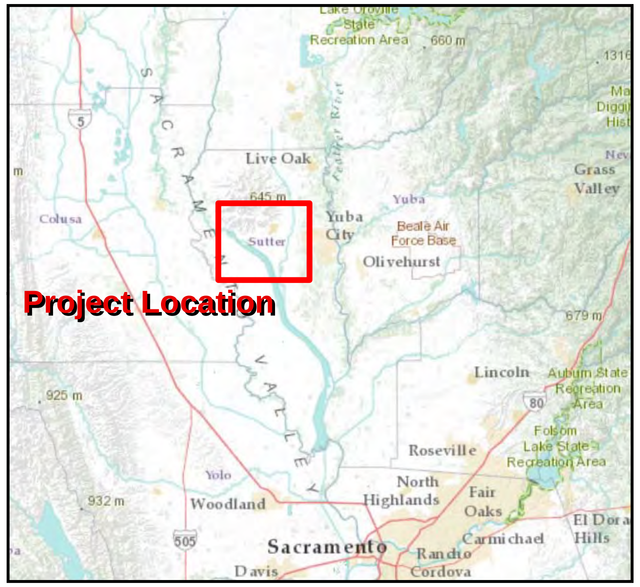
CO-OR

ED

ED-G



Background Imagery: *ESRI Online, World_Topo_Map*



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1091

🟩 Wadsworth Canal - Unit 2, right bank (WAD2)

🟧 Sutter Bypass-East Levee - above Canal (SBP1)

🟪 Other Federal Levee

Ⓟ Pump Station

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

WADSWORTH CANAL - SUTTER BYPASS

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

FEB 2012

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 19 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Reclamation District (RD) 0784 - Best Slough and Dry Creek system was conducted between December 14, 2010 and January 7, 2011. The system is comprised of three segments.

System: RD 0784 - Best Slough and Dry Creek	
Segments:	RD 0784 - Plumas Lake - Unit 3 east, Bear River above Union Pacific Interceptor
	RD 0784 - Plumas Lake - Unit 5, Best Slough-Union Pacific Interceptor left bank
	RD 0784 - Plumas Lake - Unit 6, Dry Creek

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection the RD 0784 - Best Slough and Dry Creek system is rated unacceptable because of encroachments, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The animal control, encroachment, and erosion issues should be addressed immediately.

Vegetation growth and depression/rutting issues were determined to be unacceptable but an engineering determination concluded that these items would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting an encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no long eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E. for
Colonel, U.S. Army LTC LEMASTER
District Commander DPTY CMD

Enclosures

RD 0784 - Best Slough and Dry Creek
Unacceptable - Inactive

	Unit 3 East, Bear River above UP Inter (PLU1)	Unit 5, Best Slough UP left bank (PLU5)	Unit 6, Dry Creek (PLU6)						
General Items									
Operations and Maintenance Manuals	A	A	A						
Emergency Supplies and Equipment	A	A	A						
Flood Preparedness and Training	A	A	M						
Levee Embankment Items									
Vegetation Growth	🟨 U	🟨 U	🟨 U						
Sod Cover	A	A	M						
Encroachments	🟥 U	🟥 U	🟥 U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	M	M	A						
Erosion/Bank Caving	🟥 U	🟨 U	M						
Settlement	M	M	M						
Depressions/Rutting	🟨 U	🟨 U	🟨 U						
Cracking	A	A	A						
Animal Control	🟨 U	M	🟥 U						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	N/A	N/A	N/A						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

🟥 Likely Prevents Performance In Next Flood Event

🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe

🟨 Not Likely to Prevent Performance In Next Flood Event

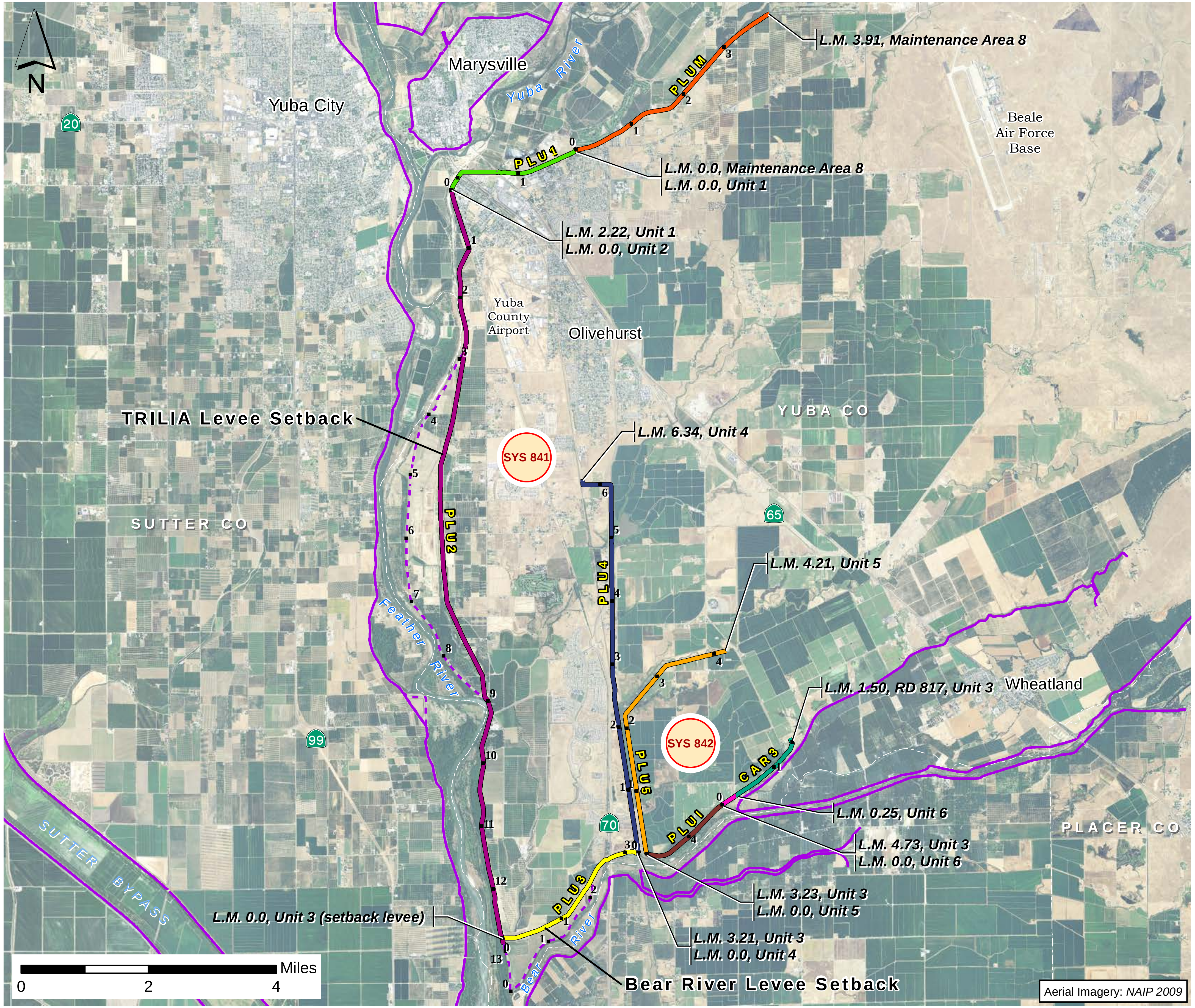
<u>Legend</u>

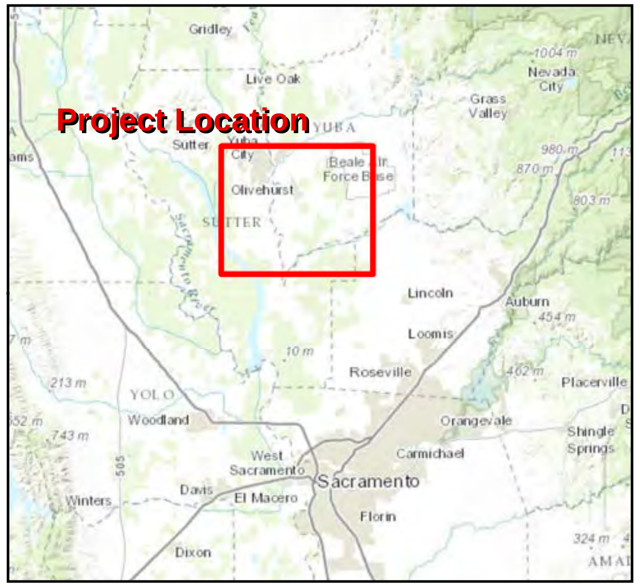
A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

4/18/2011

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Rev - 8/10/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 841

- MA 8, Yuba River (PLUM)
- Unit 1, Yuba River (PLU1)
- Unit 2, Feather River (PLU2)
- Unit 3 west, Bear River below UP Intercept (PLU3)
- Unit 4, Best Slough-UP Intercept right bank (PLU4)

SYSTEM 842

- Unit 3 east, Bear River above UP Intercept (PLUI)
- Unit 5, Best Slough-UP Intercept left bank (PLU5)
- Unit 6, Dry Creek (PLU6)
- RD 0817, Unit 3 (CAR3)

- Other Federal Levee
- Abandoned Frontline Levee
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS SYSTEMS MAP

RD 784 - PLUMAS LAKES

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

AUG 2012

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 784 – Best Slough and Dry Creek Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 784 – Best Slough and Dry Creek Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000842
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 3 East, Bear River above UP Intercept (PLUI)</td><td>5204000842</td><td>U</td></tr>
<tr><td>Unit 5, Best Slough – UP Intercept left bank (PLU5)</td><td>5204000845</td><td>U</td></tr>
<tr><td>Unit 6, Dry Creek (PLU6)[1]</td><td>5204000846</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
</table>

Preparing Contractor Name and Address	RJH Consultants, Inc. 9800 Mt. Pyramid Court, Suite 330 Englewood, Colorado 80112

[1] During this PI, it was discovered that Unit 6, Dry Creek (PLU6) ends at L.M. 0.25, Unit 6. The remaining portion was identified as RD 0817, Unit 3 (CAR3) ending at L.M. 1.50, RD 817, Unit 3. Future inspections will reflect this change.

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C.2 for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C.2 for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 19 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Reclamation District (RD) 0784 - Plumas Lakes Basin system was conducted between December 14, 2010 and January 7, 2011. The system is comprised of five segments.

System: RD 0784 - Plumas Lakes Basin	
Segments:	RD 0784 - Plumas Lake - Unit 1, Yuba River
	RD 0784 - Plumas Lake - Unit 2, Feather River
	RD 0784 - Plumas Lake - Unit 3 west, Bear River below Union Pacific Interceptor
	RD 0784 - Plumas Lake - Unit 4, Best Slough-Union Pacific Interceptor right bank
	RD 0784 - Plumas Lake - MA 8, Yuba River

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation and Inspection Program (RIP). The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection and improvements to the system since the time of inspection, the RD 0784 - Plumas Lakes Basin system is rated minimally acceptable. The system received unacceptable ratings in the categories of vegetation growth, encroachments, slope stability, erosion/bank caving, depression/rutting, cracking, animal control, and underseepage relief wells/ toe drainage systems but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

We appreciate the efforts of the Local Maintaining Agency to complete repairs on some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and the effort was reflected in the final results. We also acknowledge the August 15, 2012, memorandum documenting additional improvements. These responses to unacceptable items have not been incorporated in the final inspection report because they would not affect the overall ratings. They will be incorporated and field verified during our next inspection. We urge your Board and the Local Maintaining Agency to continue the ongoing maintenance activities and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable USACE inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Rick L. Poeppelman, P.E.
Chief, Engineering Division
Levee Safety Officer

Enclosures

RD 0784 - Plumas Lakes Basin
Minimally Acceptable - Active

	MA 8, Yuba River (PLUM)	Unit 1, Yuba River (PLU1)	Unit 2, Feather River (PLU2)	Unit 3 West, Bear River below Union Pacific Interceptor (PLU3)	Unit 4, Best Slough - Union Pacific Intercept Right Bank (PLU4)				
General Items									
Operations and Maintenance Manuals	A	A	A	A	A				
Emergency Supplies and Equipment	A	A	A	A	A				
Flood Preparedness and Training	A	A	A	A	A				
Levee Embankment Items									
Vegetation Growth	U	U	M	U	U				
Sod Cover	A	A	A	A	A				
Encroachments	U	U	U	U	U				
Closure Structures	N/A	A	N/A	N/A	N/A				
Slope Stability	M	M	A	A	U				
Erosion/Bank Caving	A	A	A	A	U				
Settlement	M	M	M	M	M				
Depressions/Rutting	U	U	U	M	M				
Cracking	A	A	A	A	U				
Animal Control	U	A	A	A	A				
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A				
Riprap Revetments & Bank Protection	N/A	A	N/A	A	A				
Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A				
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	U	U	N/A				
Seepage	A	A	A	A	A				

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

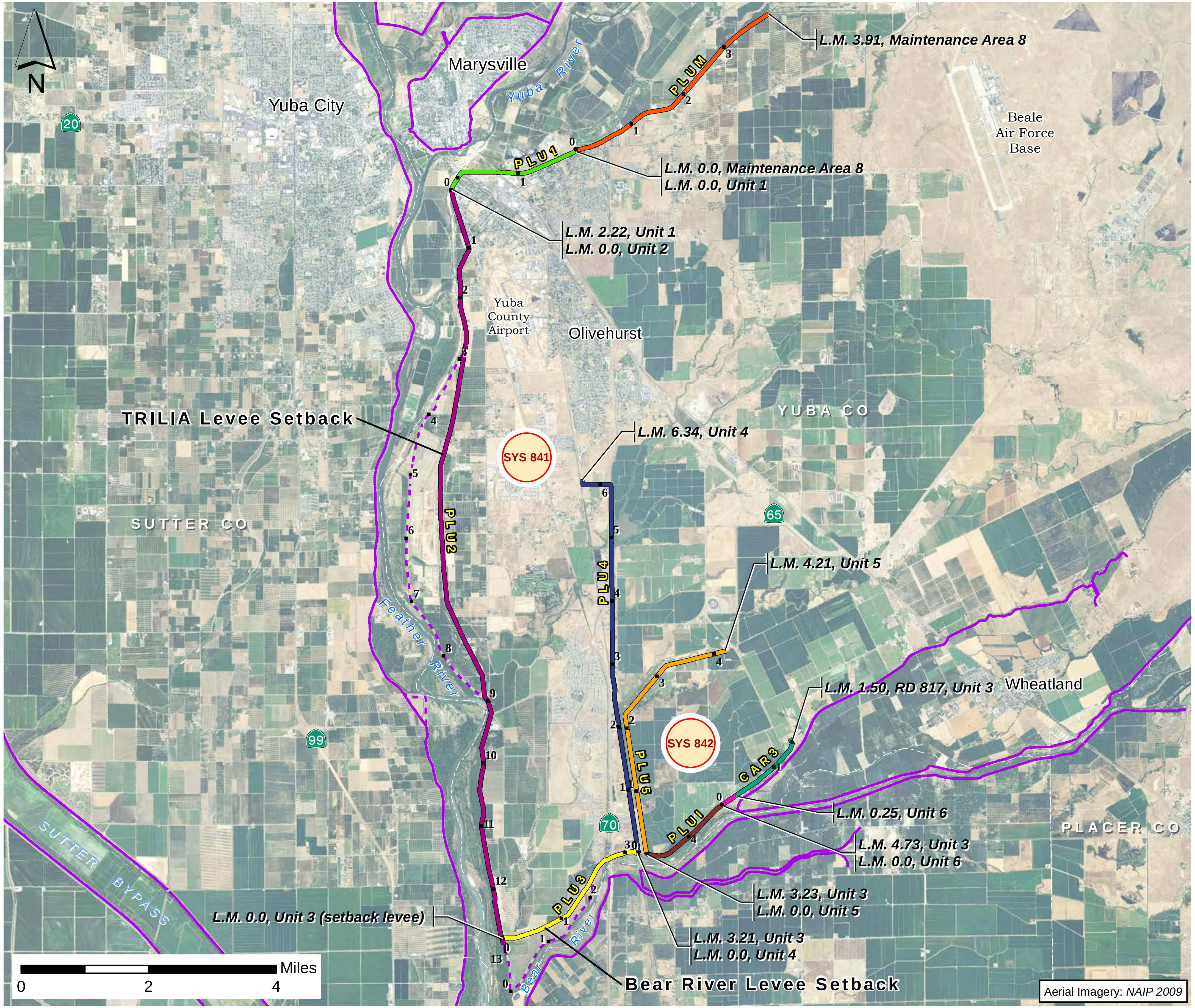
Legend

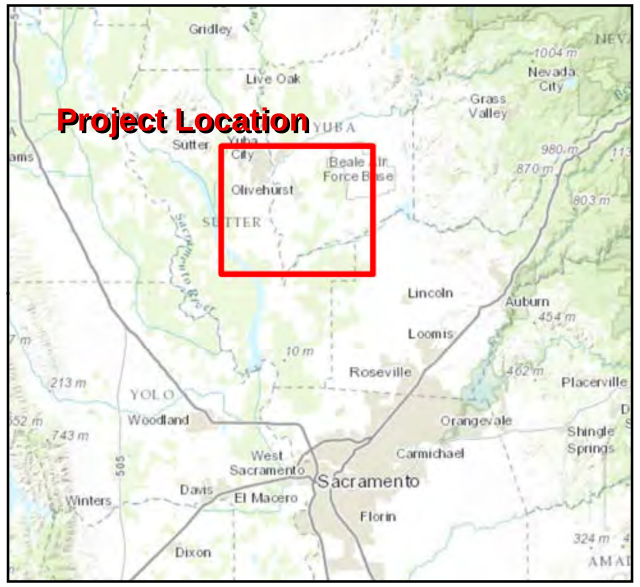
A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

4/18/2011

Rev - 8/10/2012

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 841

- MA 8, Yuba River (PLUM)
- Unit 1, Yuba River (PLU1)
- Unit 2, Feather River (PLU2)
- Unit 3 west, Bear River below UP Intercept (PLU3)
- Unit 4, Best Slough-UP Intercept right bank (PLU4)

SYSTEM 842

- Unit 3 east, Bear River above UP Intercept (PLUI)
- Unit 5, Best Slough-UP Intercept left bank (PLU5)
- Unit 6, Dry Creek (PLU6)
- RD 0817, Unit 3 (CAR3)

- Other Federal Levee
- Abandoned Frontline Levee
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

RD 784 - PLUMAS LAKES

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

AUG 2012

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 784 – Plumas Lake Basin Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 784 – Plumas Lake Basin Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000841
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>MA 8, Yuba River (PLUM)</td><td>5204000848</td><td>M</td></tr>
<tr><td>Unit 1, Yuba River (PLU1)</td><td>5204000841</td><td>M</td></tr>
<tr><td>Unit 2, Feather River (PLU2)</td><td>5204000843</td><td>M</td></tr>
<tr><td>Unit 3 west, Bear River below UP Intercept (PLU3)</td><td>5204000847</td><td>M</td></tr>
<tr><td>Unit 4, Best Slough – UP Intercept right bank (PLU4)</td><td>5204000844</td><td>M</td></tr>
</table>
</td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Minimally Acceptable</td></tr>
</table>

USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Active
Preparing Contractor Name and Address	RJH Consultants, Inc. 9800 Mt. Pyramid Court, Suite 330 Englewood, Colorado 80112

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C.1 for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

SEP 08 2014

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Deer Creek Left Bank, Unit 1 East – Tehama County Levee System on January 7-8, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Deer Creek Left Bank, Unit 1 East – Tehama County Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Erosion/bank caving, vegetation, sod cover, settlement, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Deer Creek Left Bank, Unit 1 East – Tehama County Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Doug LaMalfa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: Deer Creek Left Bank, Unit 1 East - Tehama County Levee System
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		Deer Creek - Tehama County - Unit 1 east, left bank (DR1A)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	M							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	A							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

September 8, 2014

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

SEP 08 2014

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Deer Creek Left Bank, Unit 1 West – Tehama County Levee System on January 7-8, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Deer Creek Left Bank, Unit 1 West – Tehama County Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Erosion/bank caving, vegetation, and seepage observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Deer Creek Left Bank, Unit 1 West – Tehama County Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Doug LaMalfa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: Deer Creek Left Bank, Unit 1 West - Tehama County Levee System
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		Deer Creek - Tehama County - Unit 1 West, Left Bank (DR1B)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	M							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	NA							
	Settlement	A							
	Depressions/Rutting	A							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	M							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

September 8, 2014

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

SEP 08 2014

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Deer Creek Right Bank, Unit 2 – Tehama County Levee System on January 7-8, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Deer Creek Right Bank, Unit 2 – Tehama County Levee System is rated Unacceptable. The unacceptable rating is due to erosion/bank caving and settlement (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Encroachment and vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Deer Creek Right Bank, Unit 2 – Tehama County Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Doug LaMalfa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Deer Creek Right Bank, Unit 2 - Tehama County Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Deer Creek - Tehama County - Unit 2, right bank (DR02)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	U							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	NA							
	Settlement	U							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

September 8, 2014

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

SEP 08 2014

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) attempted to conduct a Periodic Inspection (PI) for the Deer Creek Right Bank, Unit 3 – Tehama County Levee System on January 7, 2013. The adjacent land owner did not allow anyone to access the levee system for the inspection. Therefore, the condition of the levee is unknown and all inspection items have been rated "Unacceptable." The Local Maintaining Agency has been denied access to perform routine maintenance. If access is granted and a reinspection can take place, item ratings will be updated to reflect actual inspection conditions.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Deer Creek Right Bank, Unit 3 – Tehama County Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Doug LaMalfa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Deer Creek Right Bank, Unit 3 - Tehama County Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Deer Creek - Tehama County - Unit 3, right bank (DR03)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	U							
	Slope Stability	U							
	Erosion/Bank Caving	U							
	Animal Control	U							
	Culverts/Discharge Pipes	U							
	Underseepage Relief Wells/Toe Drainage Systems	U							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	U							
	Settlement	U							
	Depressions/Rutting	U							
	Cracking	U							
	Riprap Revetments & Bank Protection	U							
	Revetments other than Riprap	U							
	Seepage	U							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

September 8, 2014

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 10 2010

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the American River Flood Control District (FCD) – Dry Creek, Natomas East Main Drainage Canal (NEMDC), and Arcade Creek system was conducted between December 2, 2009 and February 8, 2010. The system is comprised of three segments.

Segment Name
Unit 2 north, NEMDC above Arcade Creek
Units 6 and 8, Dry Creek left bank
Unit 7, Arcade Creek right bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Based on observations made as part of the inspection, the American River FCD – Dry Creek, NEMDC, and Arcade Creek system is rated minimally acceptable because of a combination of unwanted vegetation growth, encroachments, erosion/bank caving, and animal control. These items should be monitored over time. The American River FCD – Dry Creek, NEMDC, and Arcade Creek system will remain active for PL 84-99 rehabilitation assistance.

The unwanted vegetation growth and encroachment items were determined to be unacceptable but an engineering determination concluded that these items would <u>not</u> prevent the system from performing as intended during the next flood event. Unwanted vegetation growth and encroachment maintenance should be conducted in accordance with the Framework.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection to the issuing of the permit *and* 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 Rehabilitation Program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

We appreciate your interest in continuing to be a part of the PL 84-99 program. If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

Michael D. Mahoney, P.E.
Chief, Construction-Operations Division
Levee Safety Officer

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

American River FCD – Dry Creek, NEMDC, Arcade Creek Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>American River FCD – Dry Creek, NEMDC, Arcade Creek Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000392
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 2 north, NEMDC above Arcade Creek</td><td>5204000395</td><td>M</td></tr>
<tr><td>Unit 7, Arcade Creek right bank</td><td>5204000396</td><td>M</td></tr>
<tr><td>Units 6 and 8, Dry Creek left bank</td><td>5204000392</td><td>M</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating *</td><td>Assigned Rating: Minimally Acceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Active</td></tr>
</table>

Preparing Contractor Name and Address	Hultgren-Tillis Engineers 2221 Commerce Avenue, Suite A-1 Concord, California 94520

* System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified Items* rated "unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner in order for the System to be kept active in the RIP.
*Refer to Appendix C.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE. All contractual work associated with this periodic inspection report has been satisfactorily completed by the Architect/Engineer Contractor named above.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Michael Mahoney, P.E.
Levee Safety Officer

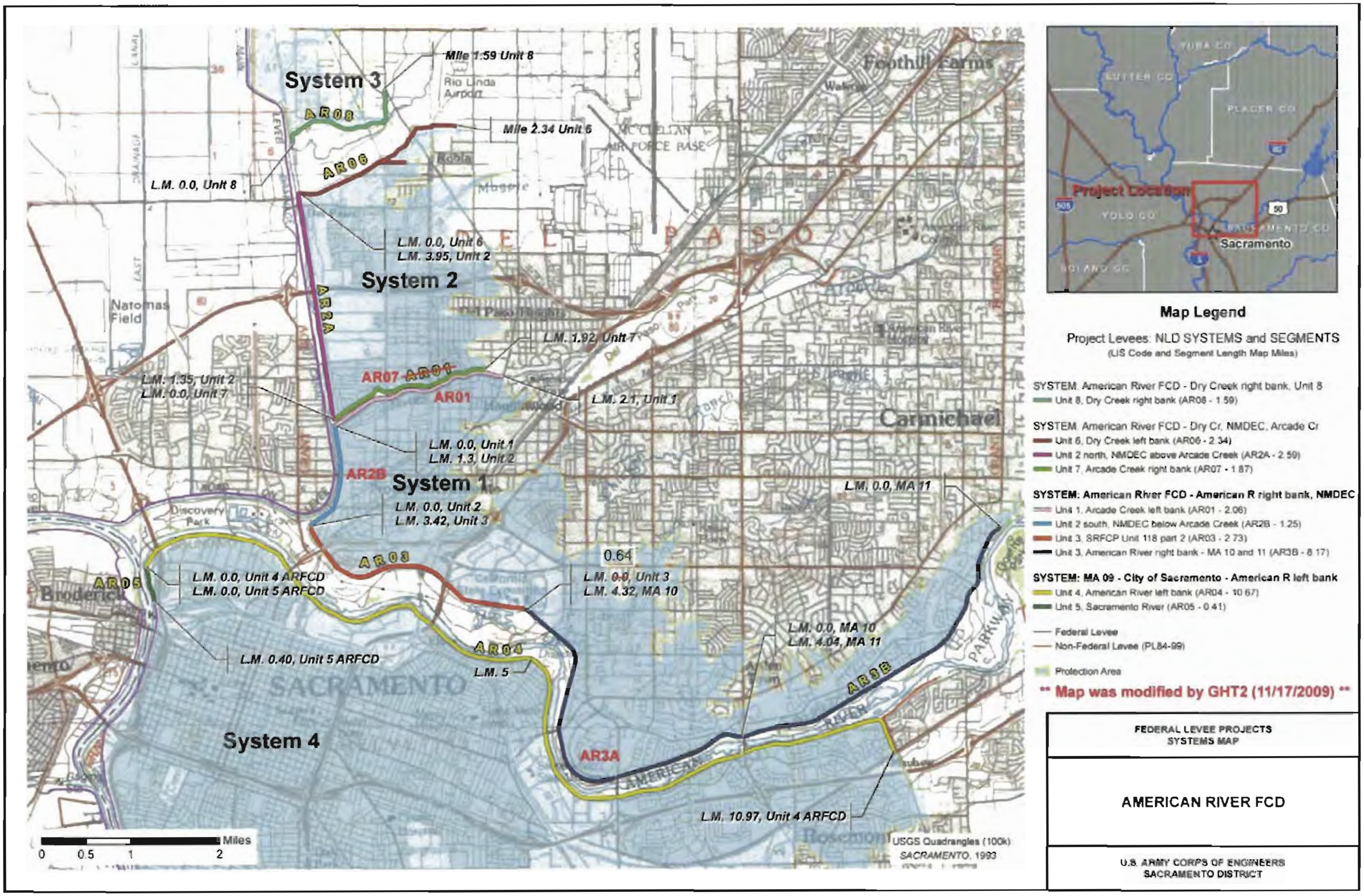
cc:

CO-E

CO-OR

ED

ED-G


System 3
Mile 1.59 Unit 8
AR08
Mile 2.34 Unit 6
AR06
L.M. 0.0, Unit 8
L.M. 0.0, Unit 6
L.M. 3.95, Unit 2
System 2
AR2A
L.M. 1.92, Unit 7
AR07 AR01
AR01
L.M. 1.35, Unit 2
L.M. 0.0, Unit 7
L.M. 2.1, Unit 1
L.M. 0.0, Unit 1
L.M. 1.3, Unit 2
AR2B
System 1
L.M. 0.0, Unit 2
L.M. 3.42, Unit 3
AR03
AR05
L.M. 0.0, Unit 4 ARFCD
L.M. 0.0, Unit 5 ARFCD
0.64
L.M. 0.0, Unit 3
L.M. 4.32, MA 10
L.M. 0.0, MA 11
L.M. 0.40, Unit 5 ARFCD
AR04
L.M. 5
L.M. 0.0, MA 10
L.M. 4.04, MA 11
AR3B
System 4
AR3A
L.M. 10.97, Unit 4 ARFCD
Foothill Farms
Carmichael
Rio Linda Airport
McClellan Air Force Base
Natomas Field
Discovery Park
Broderick
SACRAMENTO
Rosemont
AMERICAN RIVER
0 0.5 1 2 Miles
USGS Quadrangles (100k) SACRAMENTO, 1993
Yuba Co
Sutter Co
Placer Co
Yolo Co
Sacramento Co
Solano Co
Project Location
Sacramento
Map Legend
Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Map Miles)
SYSTEM: American River FCD - Dry Creek right bank, Unit 8
Unit 8, Dry Creek right bank (AR08 - 1.59)
SYSTEM: American River FCD - Dry Cr, NMDEC, Arcade Cr
Unit 6, Dry Creek left bank (AR06 - 2.34)
Unit 2 north, NMDEC above Arcade Creek (AR2A - 2.59)
Unit 7, Arcade Creek right bank (AR07 - 1.87)
SYSTEM: American River FCD - American R right bank, NMDEC
Unit 1, Arcade Creek left bank (AR01 - 2.06)
Unit 2 south, NMDEC below Arcade Creek (AR2B - 1.25)
Unit 3, SRFCP Unit 118 part 2 (AR03 - 2.73)
Unit 3, American River right bank - MA 10 and 11 (AR3B - 8.17)
SYSTEM: MA 09 - City of Sacramento - American R left bank
Unit 4, American River left bank (AR04 - 10.67)
Unit 5, Sacramento River (AR05 - 0.41)
Federal Levee
Non-Federal Levee (PL84-99)
Protection Area
** Map was modified by GHT2 (11/17/2009) **
FEDERAL LEVEE PROJECTS SYSTEMS MAP
AMERICAN RIVER FCD
U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT

American River FCD - Dry Creek, NEMDC, Arcade Creek Minimally Acceptable-Active	Dry Creek Left Bank Unit 6	NEMDC Unit 2 North	Arcade Creek right bank Unit 7						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	A	A	A						
Flood Preparedness and Training	A	A	A						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	A	M	A						
Encroachments	U	U	U						
Closure Structures	A	N/A	A						
Slope Stability	A	A	A						
Erosion/Bank Caving	A	M	A						
Settlement	A	A	A						
Depressions/Rutting	A	A	A						
Cracking	A	A	A						
Animal Control	M	M	M						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	A	N/A	N/A						
Revetments other than Riprap	A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Chico Creek-Mud Creek - Unit 1 system was conducted between December 9, 2010 and December 10, 2010. The system is comprised of one segment.

System: Chico Creek-Mud Creek - Unit 1
Segments: Chico Creek - Mud Creek - Unit 1

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Unit 1 system is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The encroachment and animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Vegetation, depressions/rutting, cracking, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status

in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system is ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

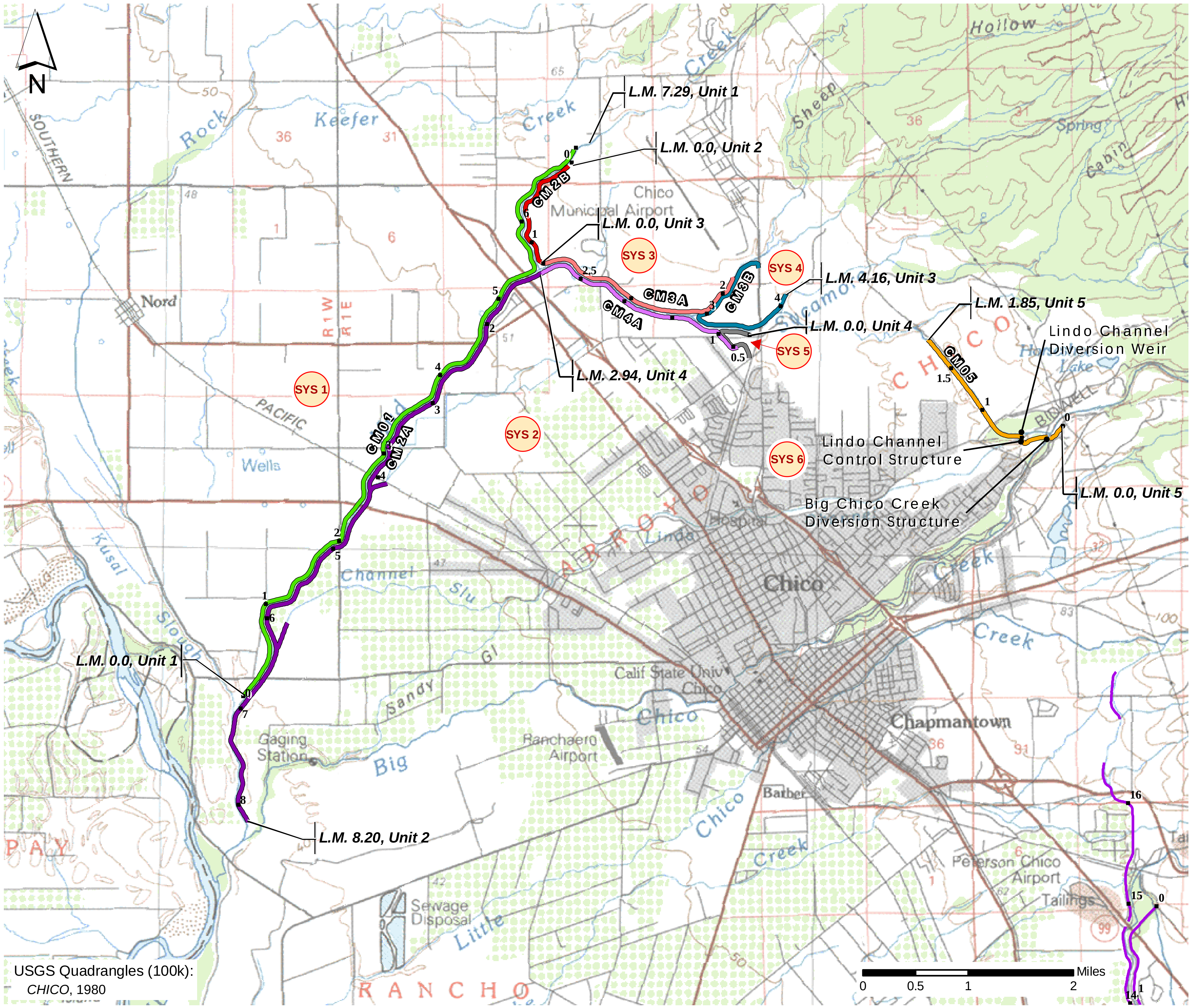
Chico Creek - Mud Creek - Unit 1 Unacceptable - Inactive	Unit 1 – Mud Creek, Right Bank (CM01)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	N/A								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	A								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	U								
Cracking	U								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	U								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

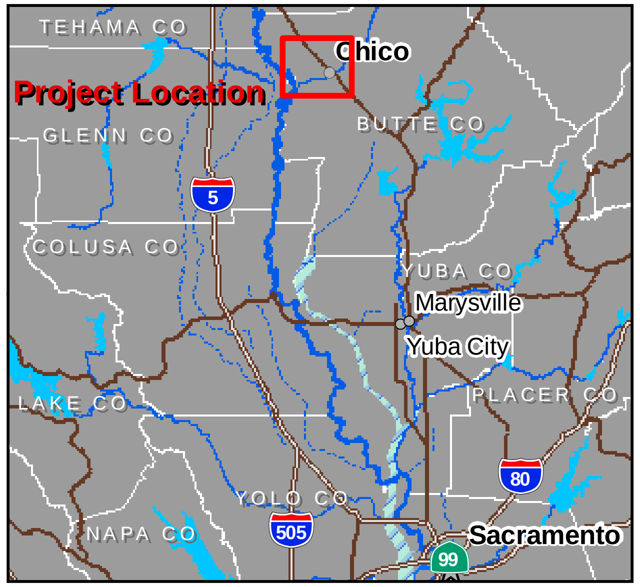
Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- — Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2
- — Units 2 south - Mud Cr below Sycamore (CM2A)
- — Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3
- — Units 2 north - Mud Cr above Sycamore (CM2B)
- — Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4
- — Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5
- — Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6
- — Unit 5, Big Chico Diversion Channel (CM05)
- — Other Federal Levee
- ▪ Levee Mile

**FEDERAL LEVEE PROJECTS
LOCATION MAP**

CHICO CREEK, MUD CREEK, AND SANDY GULCH

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Chico Creek-Mud Creek - Unit 3 east, Sycamore right system was conducted on December 7, 2010. The system is comprised of one segment.

System: Chico Creek-Mud Creek - Unit 3 east, Sycamore right
Segments: Chico Creek - Mud Creek - Unit 3 east levees, Sheep Hollow-Sycamore Cr

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Unit 3 east, Sycamore right system is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. Encroachment and animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Vegetation and cracking were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status

in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

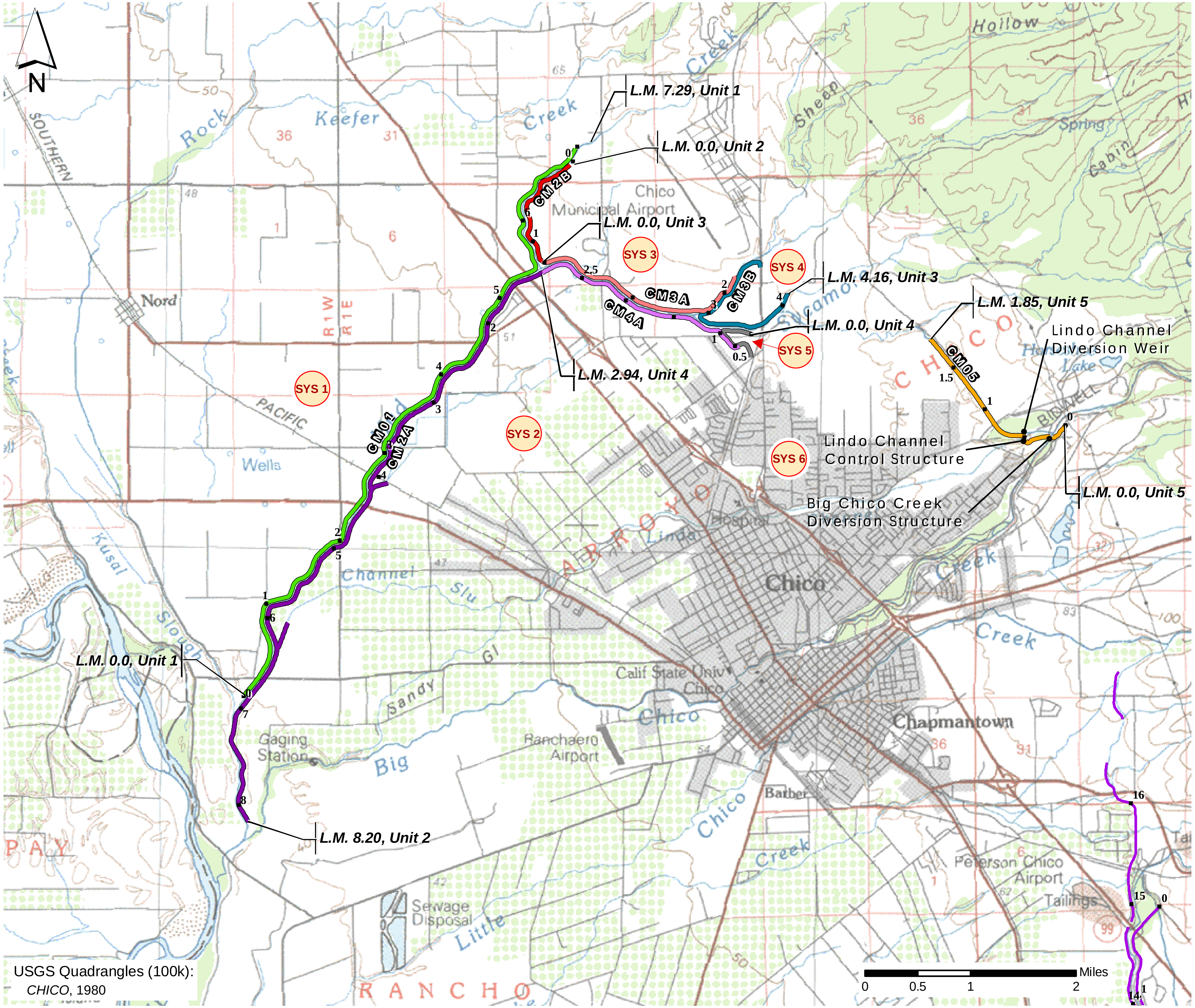
Chico Creek - Mud Creek - Unit 3 East, Sycamore Right Unacceptable - Inactive	Unit 3 East – Sheep Hollow-Sycamore Creek (CM3B)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	N/A								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	A								
Erosion/Bank Caving	M								
Settlement	A								
Depressions/Rutting	M								
Cracking	U								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	N/A								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

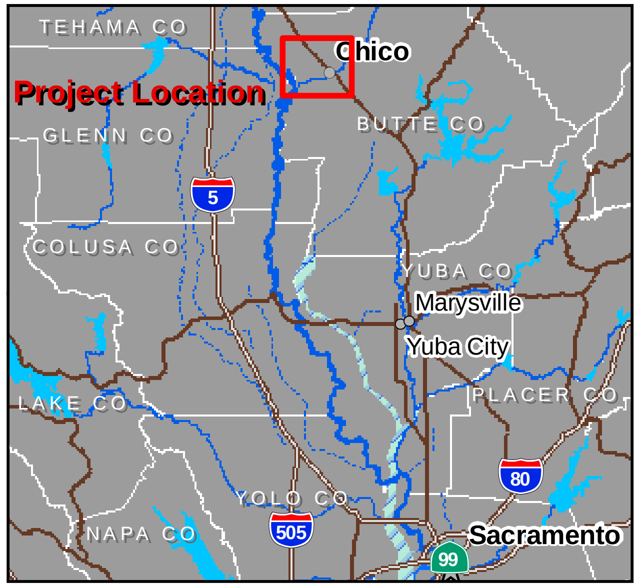
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012



USGS Quadrangles (100k):
CHICO, 1980



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2
- Units 2 south - Mud Cr below Sycamore (CM2A)
- Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3
- Units 2 north - Mud Cr above Sycamore (CM2B)
- Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4
- Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5
- Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6
- Unit 5, Big Chico Diversion Channel (CM05)
- Other Federal Levee
- ▪ Levee Mile

**FEDERAL LEVEE PROJECTS
LOCATION MAP**

CHICO CREEK, MUD CREEK, AND SANDY GULCH

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Chico Creek-Mud Creek - Unit 4 east, Sycamore left system was conducted on December 7, 2010. The system is comprised of one segment.

System: Chico Creek-Mud Creek - Unit 4 east, Sycamore left
Segments: Chico Creek - Mud Creek - Unit 4 east levees

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Unit 4 east, Sycamore left system is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. Encroachment and animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Vegetation, sod cover, and erosion/bank caving were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status

in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

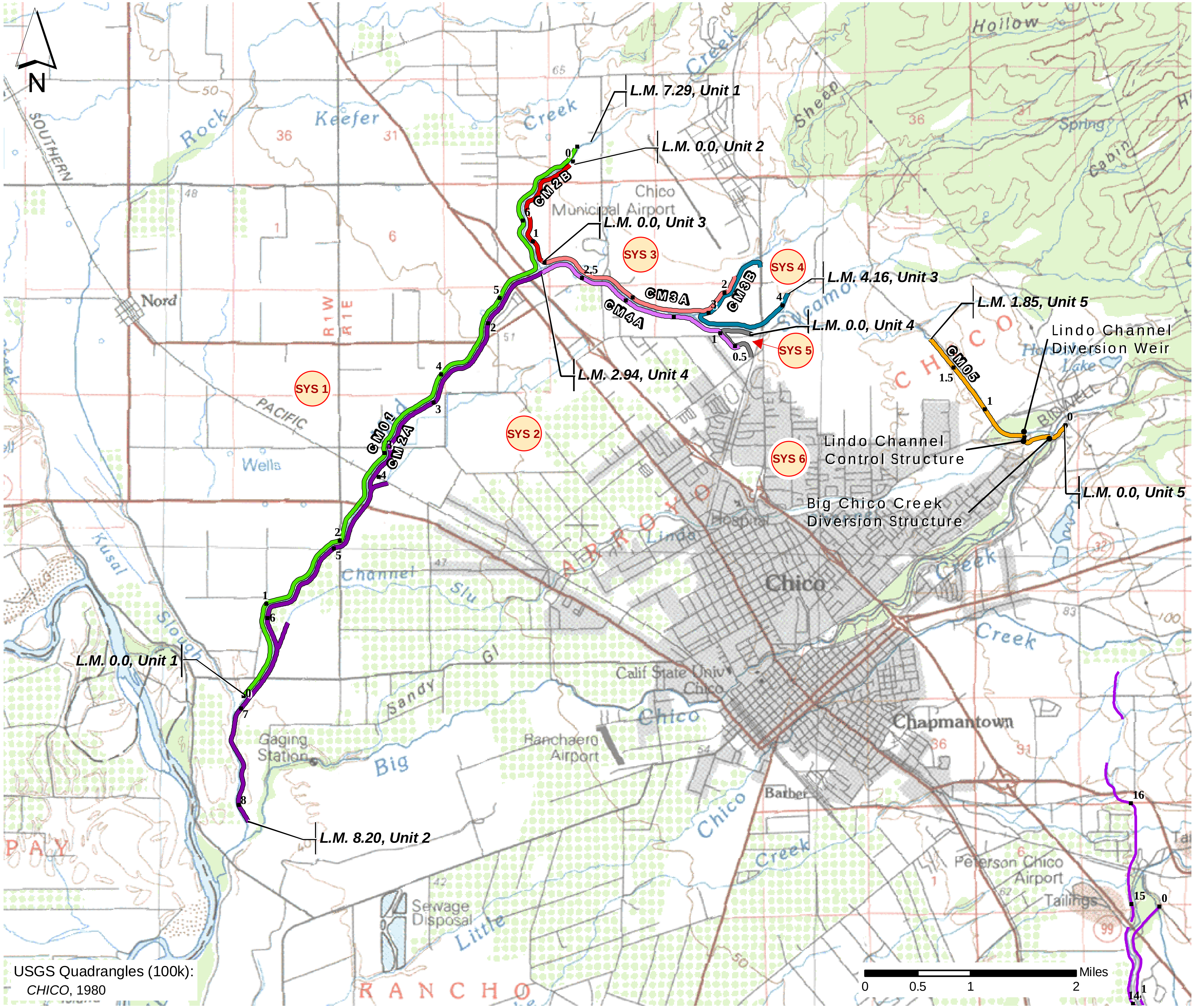
Chico Creek - Mud Creek - Unit 4 East, Sycamore Left Unacceptable - Inactive	Unit 4 East – Dry Creek- Sycamore Creek (CM4B)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	U								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	M								
Erosion/Bank Caving	U								
Settlement	A								
Depressions/Rutting	M								
Cracking	A								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	N/A								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

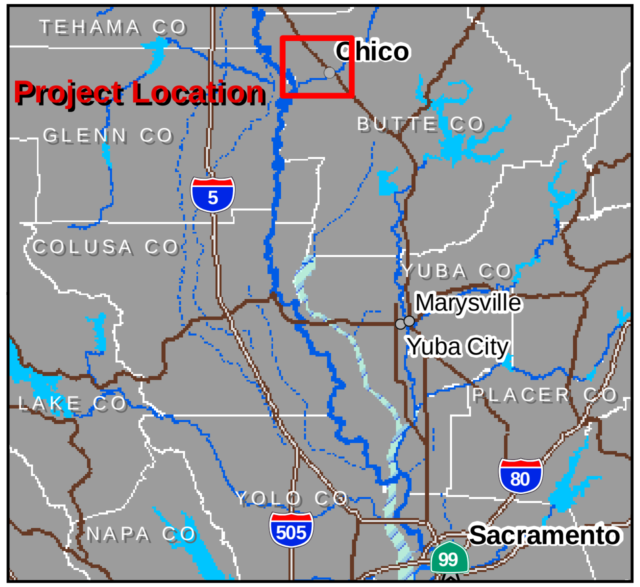
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012



USGS Quadrangles (100k):
CHICO, 1980



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1

🟩 Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2

🟪 Units 2 south - Mud Cr below Sycamore (CM2A)

🟪 Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3

🟥 Units 2 north - Mud Cr above Sycamore (CM2B)

🟥 Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4

🟦 Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5

⬛ Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6

🟧 Unit 5, Big Chico Diversion Channel (CM05)

🟪 Other Federal Levee

▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

CHICO CREEK, MUD CREEK, AND SANDY GULCH

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

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A Periodic Inspection for the Chico Creek-Mud Creek - Unit 5, diversion levee system was conducted on December 6, 2010 and February 9, 2011. The system is comprised of one segment.

System: Chico Creek-Mud Creek - Unit 5, diversion levee
Segments: Chico Creek - Mud Creek - Unit 5, diversion levee

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Unit 5, diversion levee system is rated unacceptable because of erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The erosion/bank caving and animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Vegetation, sod cover, encroachments, closure structures, depressions/rutting, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status

in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

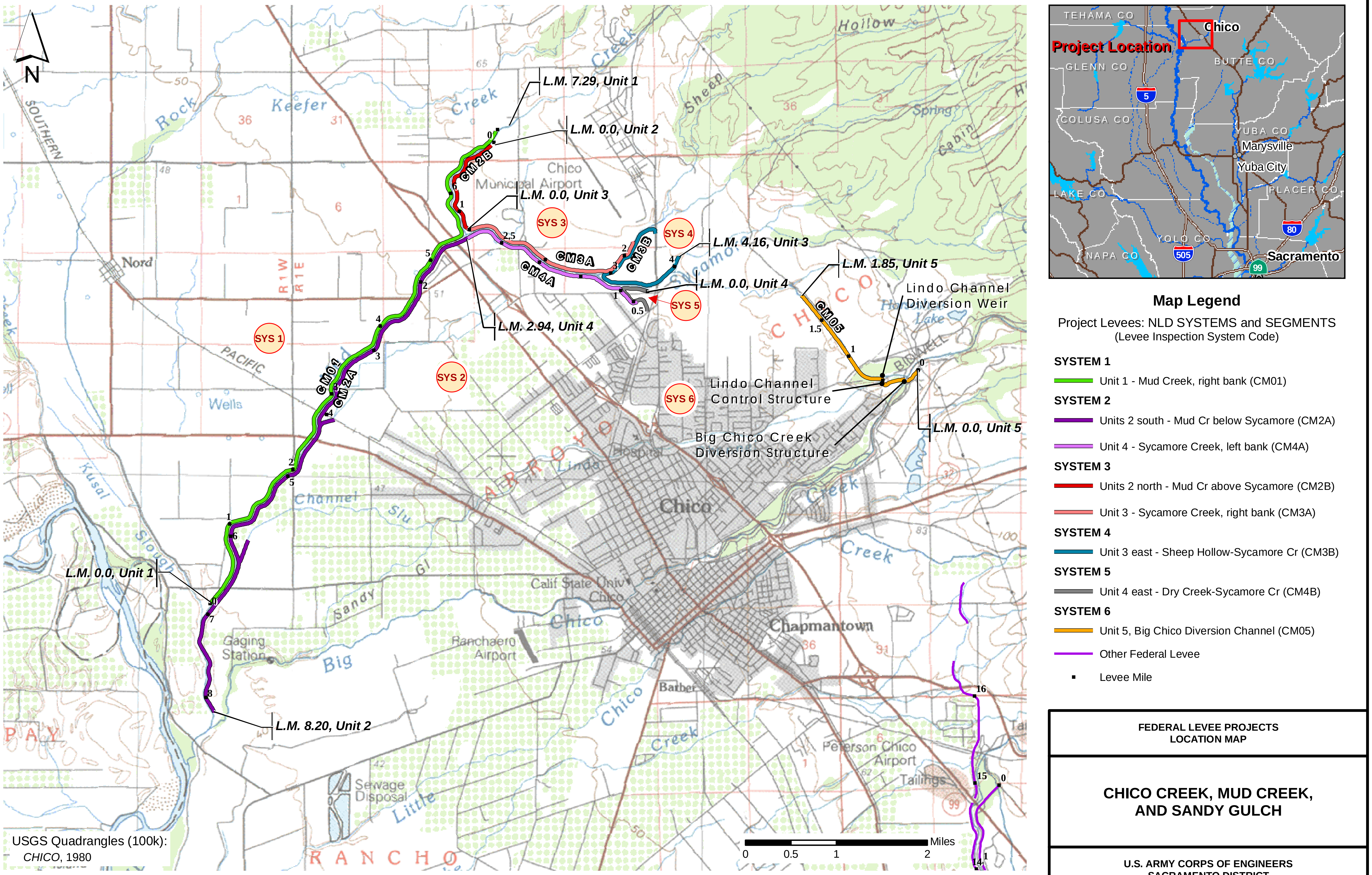
Chico Creek - Mud Creek - Unit 5, Diversion Levee Unacceptable - Inactive	Unit 5 – Big Chico Diversion Channel (CM05)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	U								
Encroachments	U								
Closure Structures	U								
Slope Stability	M								
Erosion/Bank Caving	U								
Settlement	A								
Depressions/Rutting	U								
Cracking	A								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	U								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
- Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2
- Units 2 south - Mud Cr below Sycamore (CM2A)
- Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3
- Units 2 north - Mud Cr above Sycamore (CM2B)
- Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4
- Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5
- Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6
- Unit 5, Big Chico Diversion Channel (CM05)
- Other Federal Levee
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

CHICO CREEK, MUD CREEK, AND SANDY GULCH

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Chico Creek-Mud Creek - Units 2 north and 3 system was conducted on December 8, 2010. The system is comprised of two segments.

System: Chico Creek-Mud Creek - Units 2 north and 3
Segments: Chico Creek - Mud Creek - Unit 2 north
Chico Creek - Mud Creek - Unit 3

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Units 2 north and 3 system is rated unacceptable because of animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Vegetation, encroachments, and depressions/rutting were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

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in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

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If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

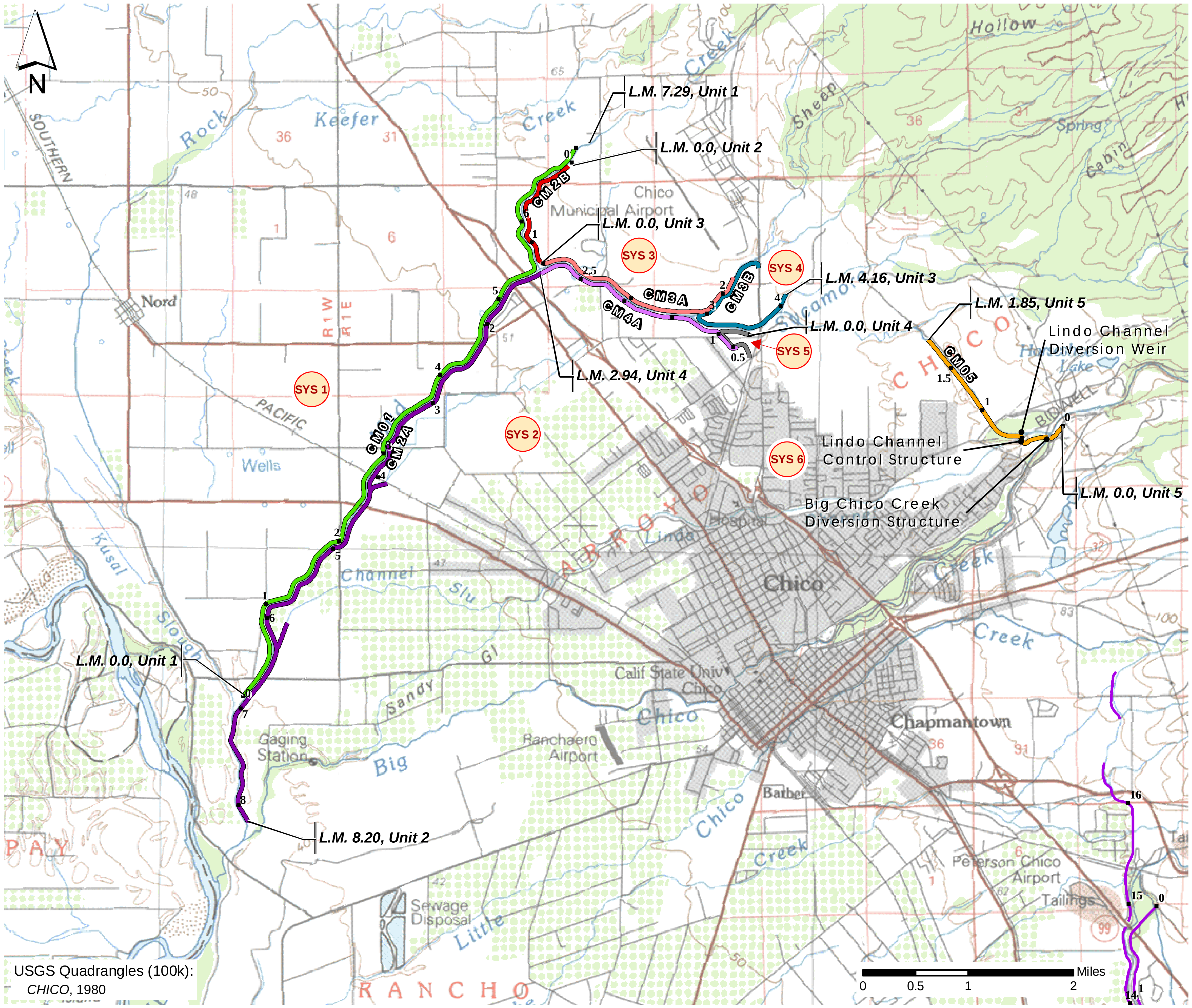
Chico Creek - Mud Creek - Units 2 North and 3 Unacceptable - Inactive	Unit 2 North – Mud Creek Above Sycamore Creek (CM2B)	Unit 3 – Sycamore Creek, Right Bank (CM3A)							
Operations and Maintenance Manuals	M	M							
Emergency Supplies and Equipment	M	M							
Flood Preparedness and Training	M	M							
Unwanted Vegetation Growth	U	U							
Sod Cover	N/A	N/A							
Encroachments	U	U							
Closure Structures	N/A	N/A							
Slope Stability	A	A							
Erosion/Bank Caving	M	M							
Settlement	A	A							
Depressions/Rutting	U	U							
Cracking	A	M							
Animal Control	U	U							
Culverts/Discharge Pipes	N/A	N/A							
Riprap Revetments & Bank Protection	N/A	N/A							
Revetments other than Riprap	N/A	N/A							
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A							
Seepage	A	M							

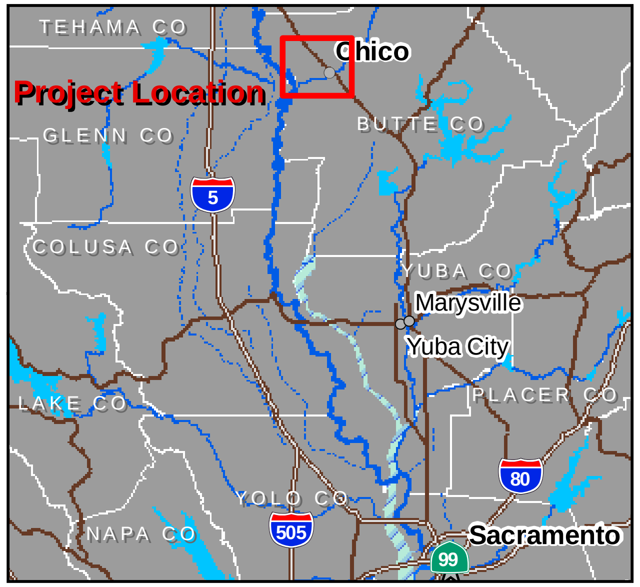
Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1

🟩 Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2

🟪 Units 2 south - Mud Cr below Sycamore (CM2A)

🟪 Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3

🟥 Units 2 north - Mud Cr above Sycamore (CM2B)

🟥 Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4

🟦 Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5

⬛ Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6

🟧 Unit 5, Big Chico Diversion Channel (CM05)

🟪 Other Federal Levee

▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

CHICO CREEK, MUD CREEK, AND SANDY GULCH

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

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A Periodic Inspection for the Chico Creek-Mud Creek - Units 2 south and 4 system was conducted between December 13, 2010 and December 15, 2010. The system is comprised of two segments.

System: Chico Creek-Mud Creek - Units 2 south and 4
Segments: Chico Creek - Mud Creek - Unit 2 south
Chico Creek - Mud Creek - Unit 4

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Chico Creek-Mud Creek - Units 2 south and 4 system is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. Encroachment and animal control issues should be addressed immediately and a rodent control program should be implemented to address burrowing animals.

Sod Cover, vegetation, depressions/rutting, cracking, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

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in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

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Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

Chico Creek - Mud Creek - Units 2 South and 4 Unacceptable - Inactive	Unit 2 – Mud Creek Below Sycamore Creek (CM2A)	Unit 4 – Sycamore Creek, Left Bank (CM4A)							
Operations and Maintenance Manuals	M	M							
Emergency Supplies and Equipment	M	M							
Flood Preparedness and Training	M	M							
Unwanted Vegetation Growth	U	U							
Sod Cover	M	U							
Encroachments	U	U							
Closure Structures	N/A	N/A							
Slope Stability	A	M							
Erosion/Bank Caving	A	A							
Settlement	A	A							
Depressions/Rutting	U	U							
Cracking	U	A							
Animal Control	U	U							
Culverts/Discharge Pipes	N/A	N/A							
Riprap Revetments & Bank Protection	U	N/A							
Revetments other than Riprap	N/A	N/A							
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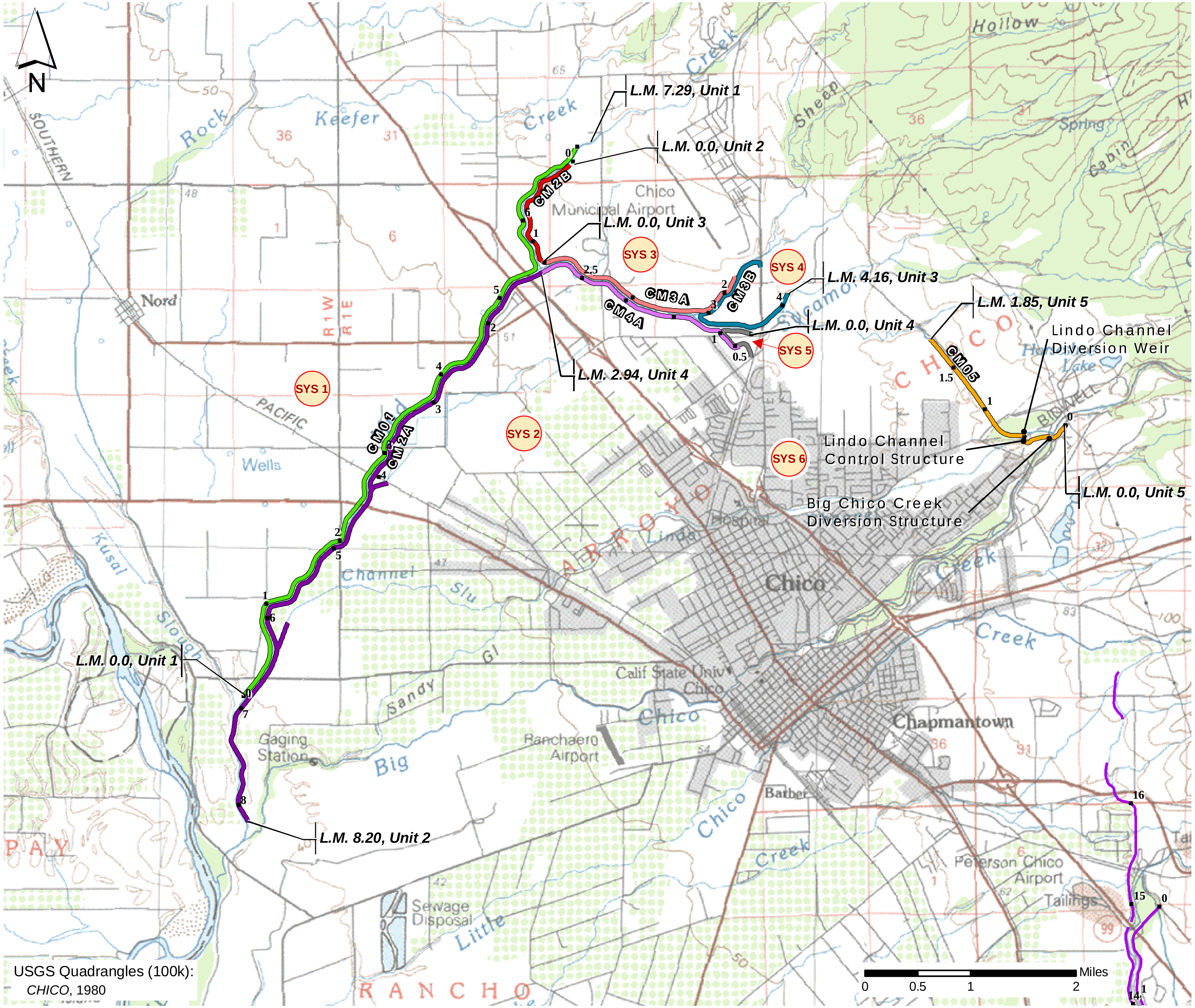
Seepage	A	A							

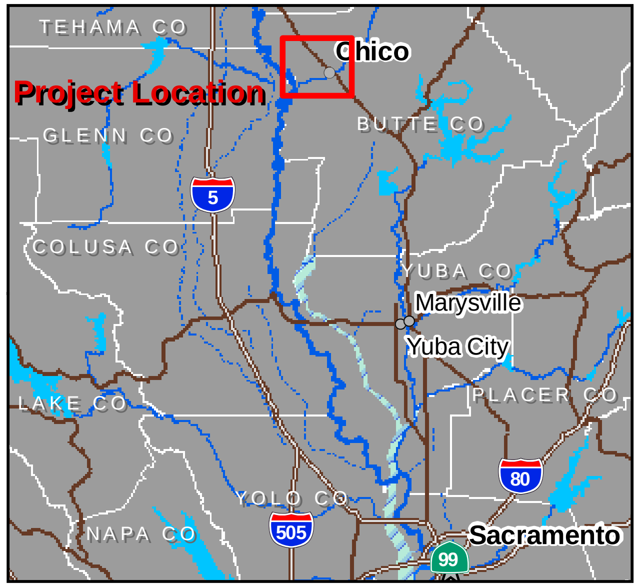
Segment & System Ratings/PL 84-99 Eligibility	Legend	
Likely Prevents Performance In Next Flood Event	A	Acceptable
Serious deficiency noted in past inspections has not been corrected within the established timeframe	M	Minimally Acceptable
Not Likely to Prevent Performance In Next Flood Event	U	Unacceptable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

April 25, 2011

Rev: 7/12/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1

🟩 Unit 1 - Mud Creek, right bank (CM01)

SYSTEM 2

🟪 Units 2 south - Mud Cr below Sycamore (CM2A)

🟪 Unit 4 - Sycamore Creek, left bank (CM4A)

SYSTEM 3

🟥 Units 2 north - Mud Cr above Sycamore (CM2B)

🟥 Unit 3 - Sycamore Creek, right bank (CM3A)

SYSTEM 4

🟦 Unit 3 east - Sheep Hollow-Sycamore Cr (CM3B)

SYSTEM 5

⬛ Unit 4 east - Dry Creek-Sycamore Cr (CM4B)

SYSTEM 6

🟧 Unit 5, Big Chico Diversion Channel (CM05)

🟪 Other Federal Levee

▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

CHICO CREEK, MUD CREEK,
AND SANDY GULCH

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

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Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

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A Periodic Inspection for the Elder Creek left bank, Unit 4 - Gerber levee system was conducted between January 31, 2011 and February 2, 2011. The system is comprised of two segments.

System: Elder Creek left bank, Unit 4 - Gerber levee
Segments: Unit 4 – Elder Creek Left Bank
Gerber Levee – Non-Federal

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

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U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
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Based on observations made as part of the inspection, the Elder Creek left bank, Unit 4 - Gerber levee system is rated unacceptable because of encroachments and erosion/bank caving (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The encroachment and erosion/bank caving issues should be addressed immediately.

Vegetation, sod cover, settlement, depressions/rutting, animal control and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

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The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to Las Flores Community Services District, the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Elder Creek Left Bank, Unit 4 - Gerber Levee
Unacceptable - Inactive

	Elder Creek - Tehama County - Unit 4, Left Bank (ELD2)	Gerber Levees - Tehama County Non Federal (GRBR)
General Items		
Operations and Maintenance Manuals	M	A
Emergency Supplies and Equipment	M	A
Flood Preparedness and Training	M	A
Levee Embankment Items		
Vegetation Growth	U	U
Sod Cover	U	N/A
Encroachments	U	U
Closure Structures	N/A	N/A
Slope Stability	A	M
Erosion/Bank Caving	U	A
Settlement	A	U
Depressions/Rutting	U	M
Cracking	A	A
Animal Control	U	U
Culverts/Discharge Pipes	N/A	N/A
Riprap Revetments & Bank Protection	U	N/A
Revetments other than Riprap	A	A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A
Seepage	A	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

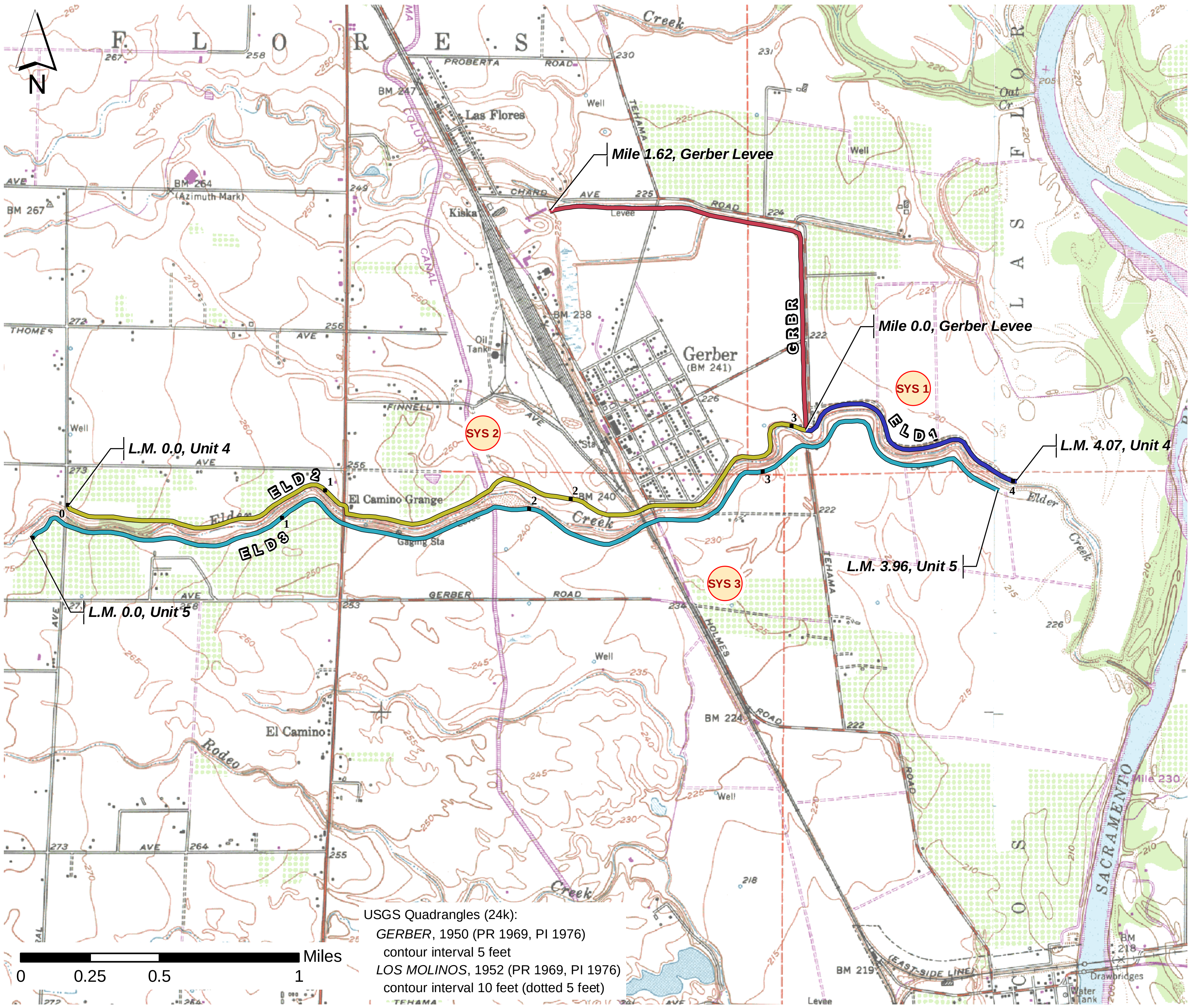
Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

June 10, 2011



USGS Quadrangles (24k):
GERBER, 1950 (PR 1969, PI 1976)
contour interval 5 feet
LOS MOLINOS, 1952 (PR 1969, PI 1976)
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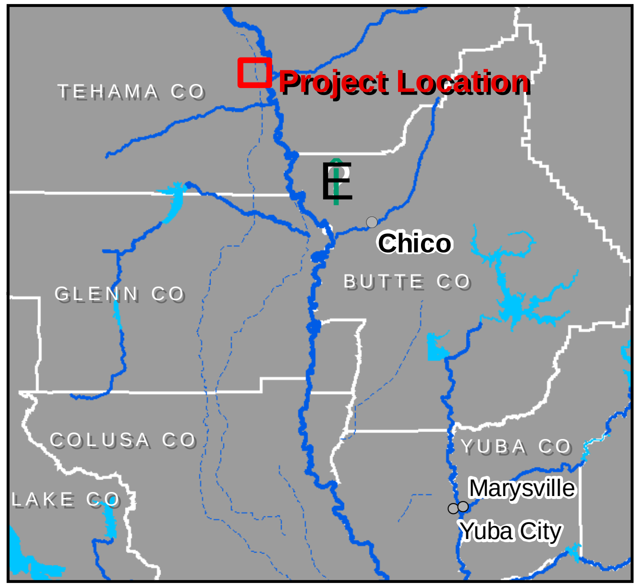


Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
▬ Unit 4 east - Elder Creek below Gerber levee (ELD1)

SYSTEM 2
▬ Unit 4 - Elder Creek, left bank (ELD2)
▬ Gerber Levees <Non-Federal> (GRBR)

SYSTEM 3
▬ Unit 5 - Elder Creek, right bank (ELD3)

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

ELDER CREEK - GERBER LEVEE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Elder Creek left bank, Unit 4 east system was conducted between January 31 and February 3, 2011. The system is comprised of one segment.

System: Elder Creek left bank, Unit 4 east
Segment: Unit 4 East - Elder Creek LB below Gerber Levee

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Elder Creek left bank, Unit 4 east system is rated unacceptable because of encroachments and erosion/bank caving (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The encroachment and erosion/bank caving items should be addressed immediately.

Vegetation, sod cover, animal control and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

Will Leady

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Elder Creek Left Bank, Unit 4 East
Unacceptable - Inactive

	Elder Creek - Tehama County - Unit 4 East, Left Bank Below Gerber Levee (ELD1)
General Items	
Operations and Maintenance Manuals	M
Emergency Supplies and Equipment	M
Flood Preparedness and Training	M
Levee Embankment Items	
Vegetation Growth	U
Sod Cover	U
Encroachments	U
Closure Structures	N/A
Slope Stability	M
Erosion/Bank Caving	U
Settlement	A
Depressions/Rutting	M
Cracking	A
Animal Control	U
Culverts/Discharge Pipes	N/A
Riprap Revetments & Bank Protection	U
Revetments other than Riprap	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A
Seepage	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

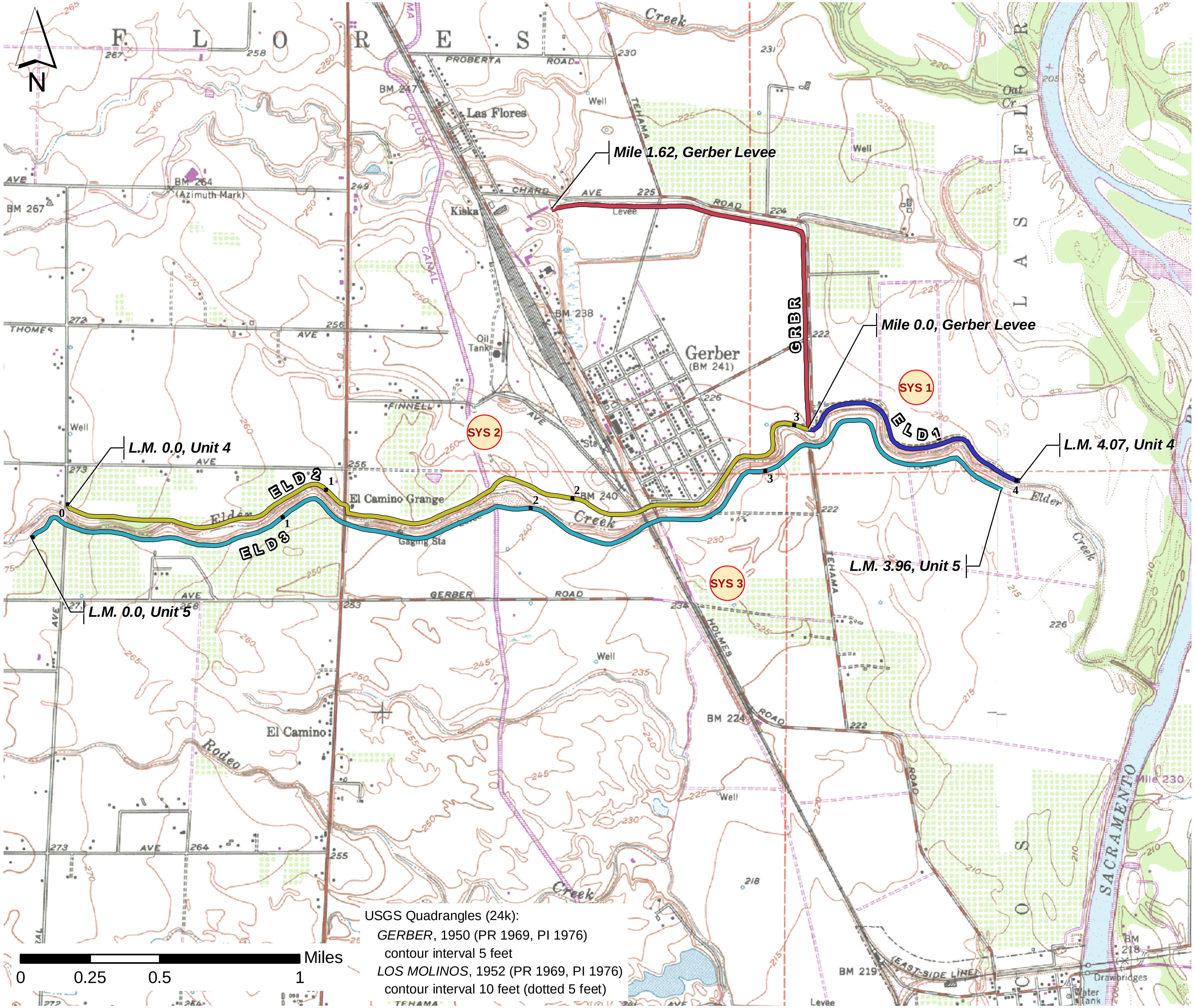
Not Likely to Prevent Performance In Next Flood Event

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

June 10, 2011



USGS Quadrangles (24k):
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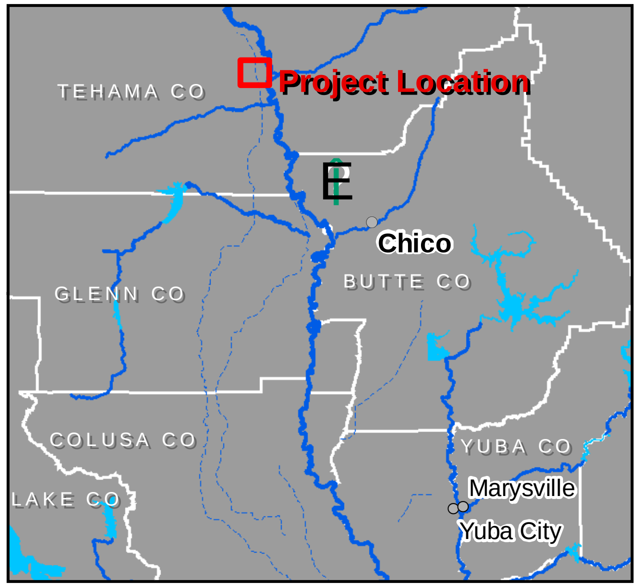


Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1
🟦 Unit 4 east - Elder Creek below Gerber levee (ELD1)

SYSTEM 2
🟨 Unit 4 - Elder Creek, left bank (ELD2)
🟥 Gerber Levees <Non-Federal> (GRBR)

SYSTEM 3
🟦 Unit 5 - Elder Creek, right bank (ELD3)

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

ELDER CREEK - GERBER LEVEE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 30 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Elder Creek right bank, Unit 5 system was conducted between January 31, 2011 and February 3, 2011. The system is comprised of one segment.

System: Elder Creek right bank, Unit 5
Segment: Unit 5 – Elder Creek Right Bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Elder Creek right bank, Unit 5 system is rated unacceptable because of animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that this issue could prevent the system from performing as intended during the next flood event. The animal control issues should be addressed immediately.

Vegetation, sod cover, encroachments, depressions/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system is ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Tehama County Office of Emergency Services, FEMA Region IX, and Congressman Wally Herger's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Elder Creek - Tehama County - Unit 5, Right Bank
Unacceptable - Inactive

	Elder Creek Right Bank, Unit 5 (ELD3)
General Items	
Operations and Maintenance Manuals	M
Emergency Supplies and Equipment	M
Flood Preparedness and Training	M
Levee Embankment Items	
Vegetation Growth	U
Sod Cover	U
Encroachments	U
Closure Structures	N/A
Slope Stability	A
Erosion/Bank Caving	A
Settlement	A
Depressions/Rutting	U
Cracking	A
Animal Control	U
Culverts/Discharge Pipes	N/A
Riprap Revetments & Bank Protection	U
Revetments other than Riprap	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A
Seepage	A

Segment & System Ratings/PL 84-99 Eligibility

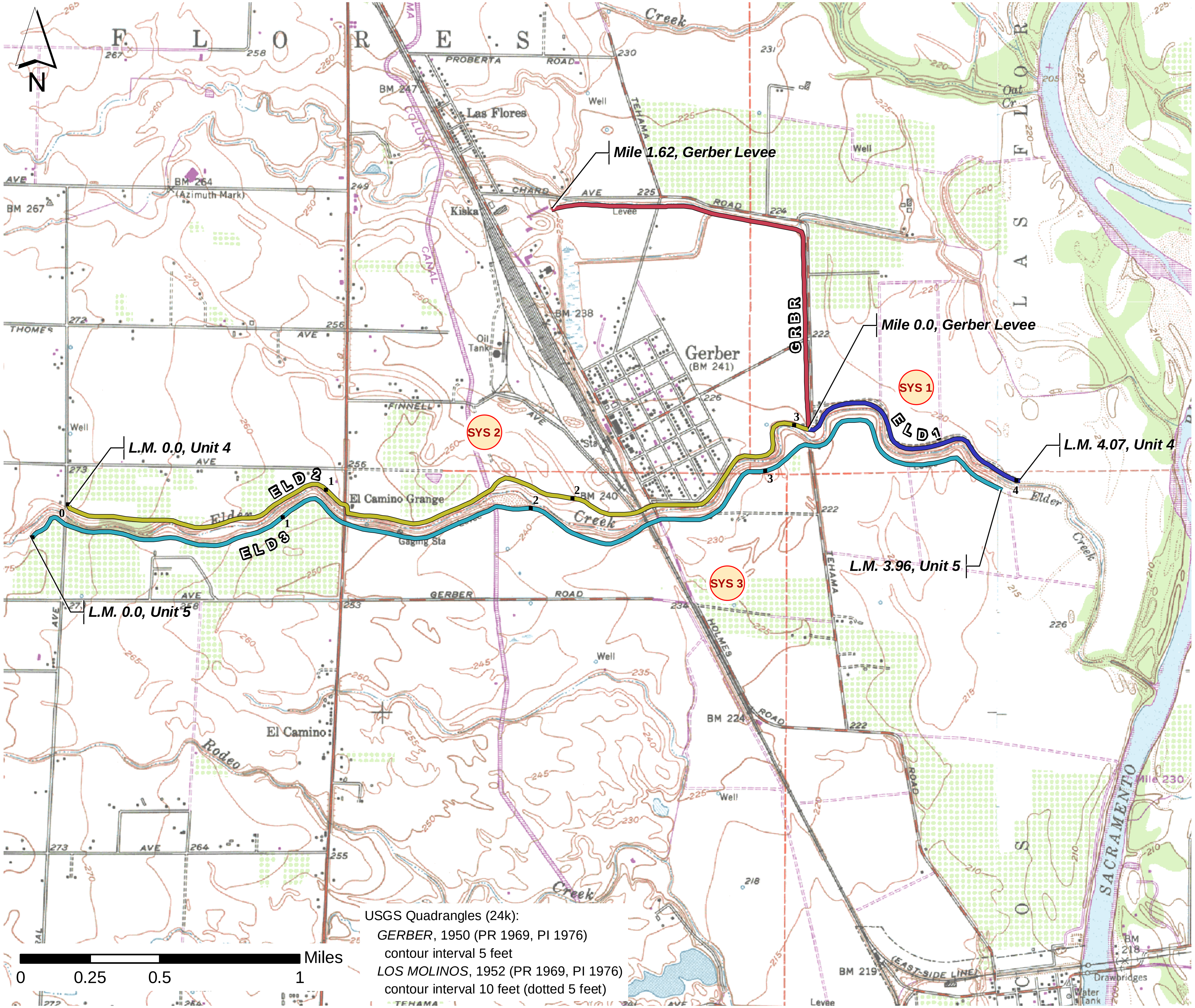
Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Not Likely to Prevent Performance In Next Flood Event

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

June 10, 2011



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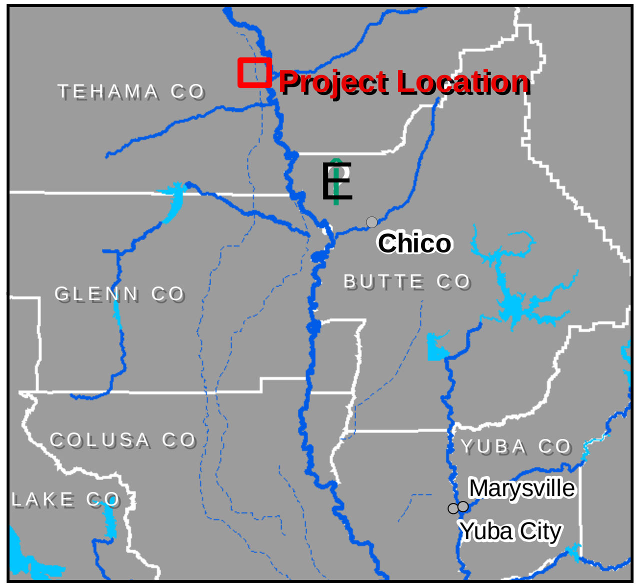


Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1

Unit 4 east - Elder Creek below Gerber levee (ELD1)

SYSTEM 2

Unit 4 - Elder Creek, left bank (ELD2)

Gerber Levees <Non-Federal> (GRBR)

SYSTEM 3

Unit 5 - Elder Creek, right bank (ELD3)

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

ELDER CREEK - GERBER LEVEE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 10 2010

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the Feather River Right Bank – Sutter Bypass East Bank Levee system was conducted between January 7, 2010 and January 27, 2010. The system is comprised of nine segments.

Segment Name
Feather River - Hamilton West Levee - south of Afterbay outflow dam
Interceptor Canal - Unit 2, east canal
LD 1 - Sutter County
LD 9 - Sutter County
Maintenance Area 03
Maintenance Area 07
RD 0777 - Live Oak - MA 16
Sutter Bypass - East Levee - south of Wadsworth Canal
Wadsworth Canal - Unit 1, left bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley

Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Based on observations made as part of the inspection, the Feather River right bank - Sutter Bypass east bank system is rated unacceptable because of encroachments, slope stability, erosion and bank caving, depressions and rutting, and underseepage relief wells (shown in red and orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. Encroachment and erosion/bank caving maintenance should be conducted in accordance with the Framework. Slope stability, depressions and rutting and underseepage relief well maintenance should be corrected immediately. The Feather River right bank - Sutter Bypass east bank system is inactive for PL 84-99 rehabilitation assistance effective the date of this letter.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing as intended during the next flood event: unwanted vegetation growth, closure structures, depressions and rutting in segments other than the Interceptor canal, culverts and discharge pipes and revetments other than riprap (shown in purple and yellow on the Report Card). Vegetation maintenance should be conducted in accordance with the Framework. Maintenance of closure structures, depressions and rutting in segments other than the Interceptor Canal, culverts and discharge pipes, revetments other than riprap must be completed no later than October 31, 2011 to bring these items to at least a minimally acceptable condition.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection to the issuing of the permit *and* 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition or meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the

Corps to schedule an inspection. It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted by October 31, 2011, or any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sutter County Office of Emergency Services, FEMA Region IX, and the Congressional delegation as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Feather River Right Bank – Sutter Bypass East Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

Project Name	Feather River Right Bank – Sutter Bypass East Bank Levee System
National Levee Database (NLD) System Identification	NLD System ID: 5205000521

Segment Name	NLD Segment ID	Segment Rating
Feather River – Hamilton West Levee – south of Afterbay outflow dam	5204000472	U
Maintenance Area 07	5204000601	U
RD 0777 – Live Oak – MA 16	5204000831	U
LD 9 – Sutter County	5204000551	U
LD 1 – Sutter County	5204000521	U
Maintenance Area 03	5204000571	M
Sutter Bypass – East Levee – south of Wadsworth Canal	5204001072	U
Wadsworth Canal – Unit 1, left bank	5204001091	M
Interceptor Canal – Unit 1, east canal	5204000502	U

USACE Division/District	South Pacific Division / Sacramento District
USACE Assigned System Rating *	Assigned Rating: Unacceptable
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive
Preparing Contractor Name and Address	Taber Consultants 3911 West Capitol Avenue West Sacramento, California 95691

* System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items* rated "unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
*Refer to Appendix C.

The Periodic Inspection has also identified Items* rated "unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner. One such correction effort has been made to a landside irrigation channel in Maintenance Area 07 which showed signs of slope instability during the Periodic Inspection. An interim slope repair was constructed prior to the completion of this report; however, this area still

poses an unacceptable risk to public safety and a long term repair should be planned and constructed.
*Refer to Appendix C.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Michael Mahoney, P.E.
Levee Safety Officer

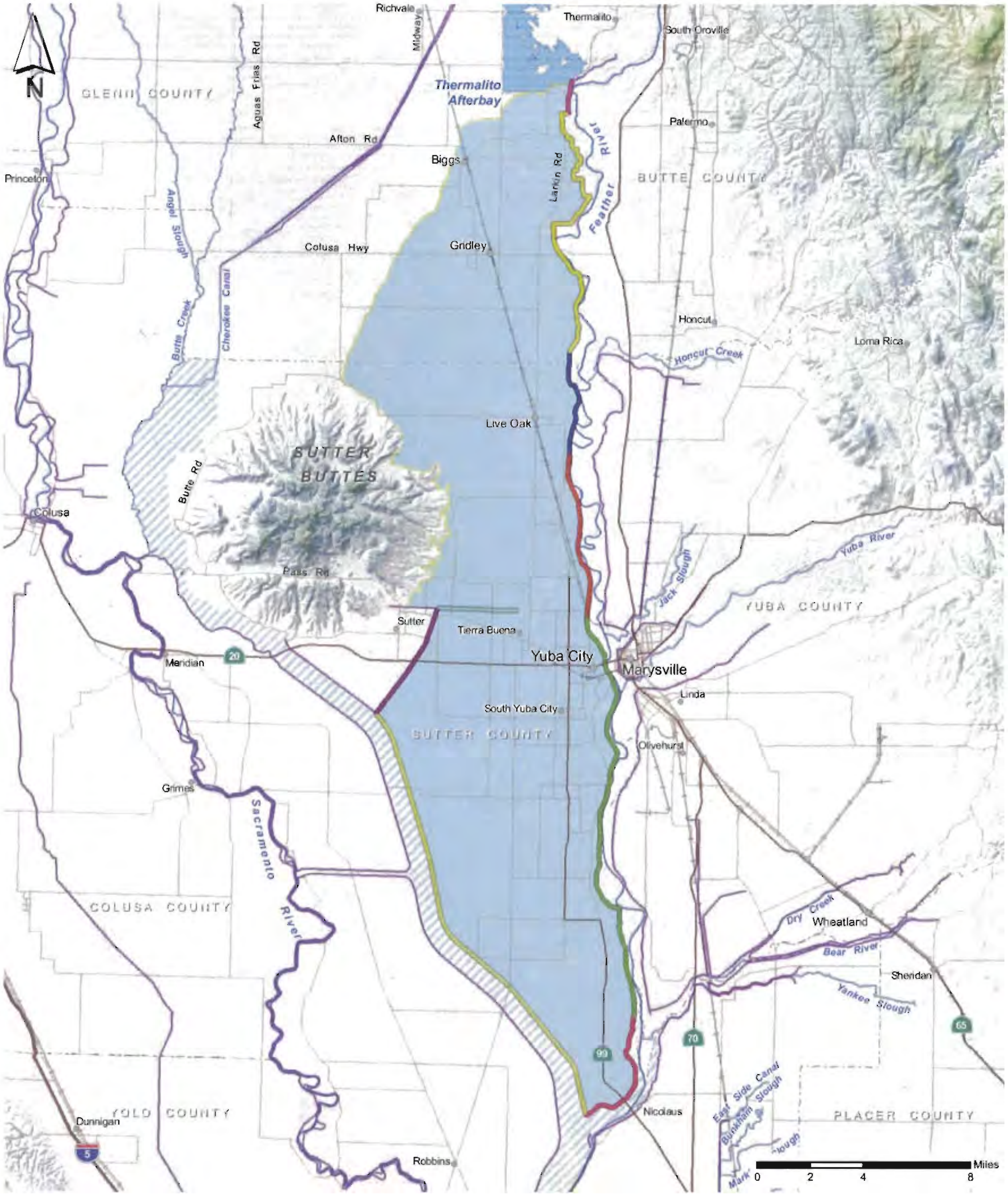
cc:

CO-E

CO-OR

ED

ED-G



FEDERAL LEVEE PROJECTS
SYSTEM MAP

FEATHER RIVER - SUTTER BASIN PROTECTION AREA

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Legend

SYSTEM SEGMENTS (LIS Code and Segment Length Miles)

- Feather River-Hamilton West Levee, south of Afterbay (HAM1 - 1.29)
- Maintenance Area 7 (MA07 - 11.87)
- RD 777-Live Oak - MA 16 (MA16 - 4.06)
- LD 9 - Sutter County (LD9S - 6.25)
- LD 1 - Sutter County (LD1S - 16.28)
- Maintenance Area 3 (MA03 - 5.11)
- Sutter Bypass-East Levee, south of Wadsworth Canal (SBP2 - 17.43)
- Wadsworth Canal - Unit 1 (WAD1 - 4.63)
- Interceptor Canal - Unit 2, east canal (INT2 - 3.03)
- Other Federal Levees
- Protection Area
- ▨ Sutter Bypass

Feather River Right Bank – Sutter Bypass East Bank Levee System Unacceptable-Inactive

	Feather River – Hamilton West Levee – South of Afterbay Outflow Dam	Maintenance Area 07	Reclamation District 777 Live Oak – Maintenance Area 16	Levee District 9 – Sutter County	Levee District 1 – Sutter County	Maintenance Area 03	Sutter Bypass – East Levee – South of Wadsworth Canal	Wadsworth Canal – Unit 1, Left Bank	Interceptor Canal – Unit 1, East Canal
Operations and Maintenance Manuals	M	M	M	M	M	M	M	M	M
Emergency Supplies and Equipment	A	A	A	M	A	A	A	A	A
Flood Preparedness and Training	A	A	A	M	A	A	A	A	A
Unwanted Vegetation Growth	U	U	U	U	U	U	U	U	U
Sod Cover	N/A	M	M	M	M	M	M	M	A
Encroachments	U	U	U	U	U	U	U	U	U
Closure Structures	U	N/A	N/A	A	A	N/A	N/A	A	N/A
Slope Stability	M	U	A	U	M	M	M	A	M
Erosion/Bank Caving	A	U	U	U	U	U	U	U	U
Settlement	A	A	A	A	A	A	A	A	A
Depressions/Rutting	U	U	M	U	M	M	U	M	U
Cracking	A	A	A	A	A	A	A	A	A
Animal Control	A	M	M	M	M	M	M	M	M
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A	U	N/A	N/A
Riprap Revetments & Bank Protection	N/A	M	N/A	N/A	M	M	M	N/A	N/A
Revetments other than Riprap	A	N/A	N/A	U	M	N/A	M	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	U	N/A	N/A	N/A	N/A
Seepage	A	A	A	A	A	A	A	A	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUN 2 0 2014

Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Honcut Creek Area – Eastern Levee System on January 10, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Honcut Creek Area – Eastern Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, animal control, and settlement. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are Minimally Acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items and system will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Honcut Creek Area – Eastern Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell For
Colonel, U.S. Army
District Commander

[illegible] LEMANSKI
LTC EN
DEPUTY COMMANDER

Enclosures

System: Honcut Creek Area - Eastern Levee System
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		Honcut Creek Area - Eastern (HNCT)
General	Operations and Maintenance Manuals	M
	Emergency Supplies and Equipment	M
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U
	Closure Structures	N/A
	Slope Stability	M
	Erosion/Bank Caving	U
	Animal Control	U
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	M
	Settlement	U
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	M

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

July 2, 2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUN 27 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Knights Landing U2 – Yolo Bypass – Service Area 6 Levee System was conducted between Jan 3, 2012 and Feb 8, 2012. The system is comprised of three segments.

System: Knights Landing U2 – Yolo Bypass – Service Area 6
Knights Landing Ridge Cut – Unit 2, Left Bank
Service Area 6 – Yolo County – Sacramento River Right Bank Above Fremont Weir
Yolo Bypass – West Levee – Unit 1

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Knights Landing U2 – Yolo Bypass – Service Area 6 Levee System is rated unacceptable because of sod cover, encroachments, slope stability, erosion/bank caving, cracking and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, closure structures and depression/rutting were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Knights Landing U2 – Yolo Bypass – Service Area 6 Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Knights Landing U2 – Yolo Bypass – Service Area 6 Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205001411
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Knights Landing Ridge Cut – Unit 2, Left Bank (KNT2)</td><td>5204001412</td><td>U</td></tr>
<tr><td>Service Area 6 – Yolo County – Sacramento River Right Bank Above Fremont Weir (S6YC)</td><td>5204001061</td><td>U</td></tr>
<tr><td>Yolo Bypass – West Levee – Unit 1 (YBW1)</td><td>5204001121</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99</td><td>Assigned Status: Inactive</td></tr>
</table>

Rehabilitation Status	
Preparing Contractor Name and Address	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosures 1 through 3, Appendices C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting.
Refer to Enclosures 1 through 3, Appendices C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

Knights Landing U2 - Yolo Bypass - Service Area 6 Levee System Unacceptable - Inactive

	Knights Landing Ridge Cut - Unit 2, Left Bank (KNT2)	Service Area 6 - Yolo County - Sacramento River Right Bank Above Fremont Weir (S6YC)	Yolo Bypass - West Levee - Unit 1 (YBW1)
General Items			
Operations and Maintenance Manuals	M	M	M
Emergency Supplies and Equipment	A	A	A
Flood Preparedness and Training	A	A	A
Levee Embankment Items			
Unwanted Vegetation Growth	U	U	U
Sod Cover	A	U	A
Encroachments	U	U	U
Closure Structures	U	N/A	N/A
Slope Stability	U	U	M
Erosion/Bank Caving	U	U	U
Settlement	U	A	A
Depressions/Rutting	M	U	A
Cracking	U	U	U
Animal Control	U	U	U
Culverts/Discharge Pipes	N/A	N/A	N/A
Riprap Revetments & Bank Protection	N/A	M	M
Revetments other than Riprap	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A
Seepage	A	A	M

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

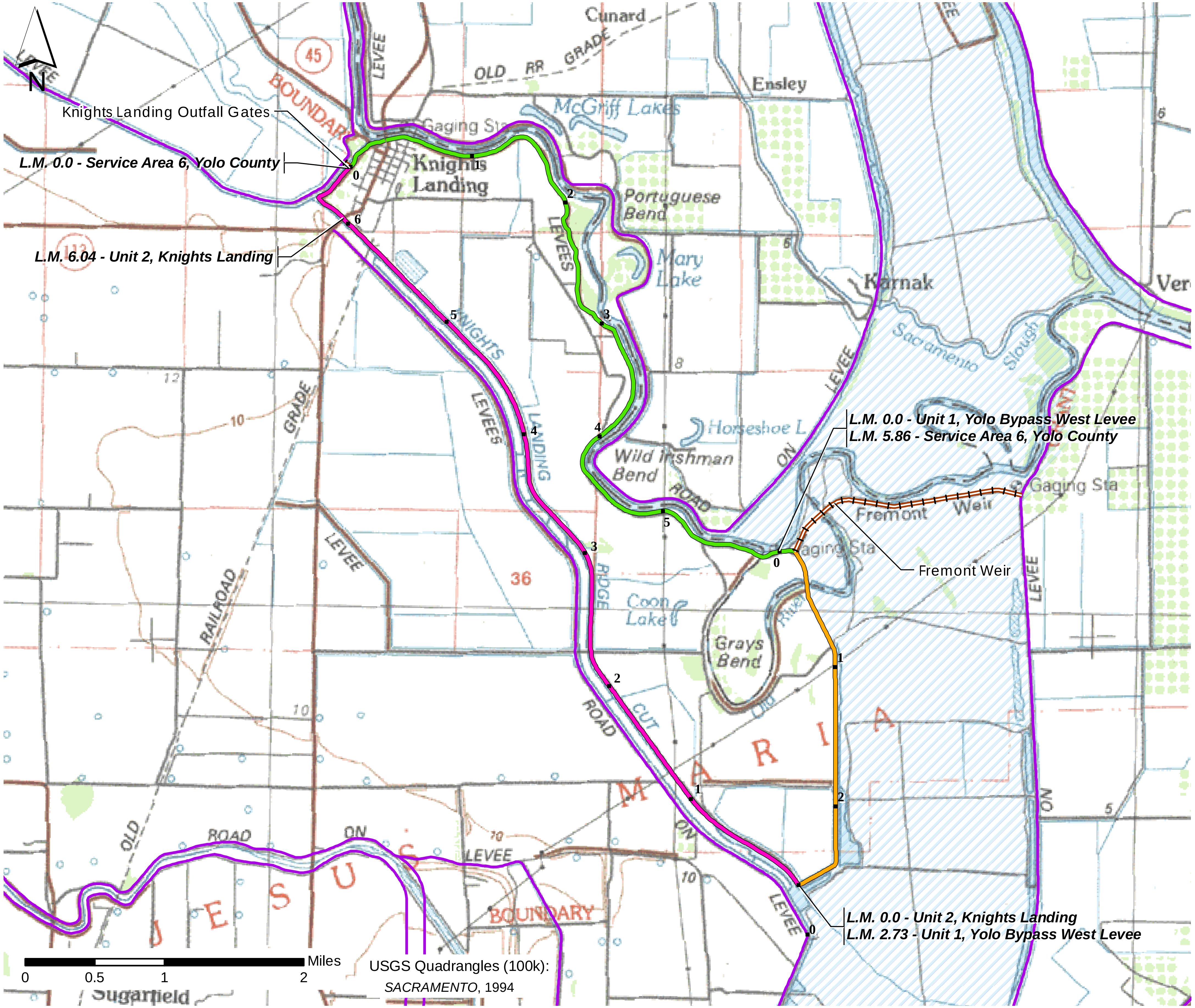
Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

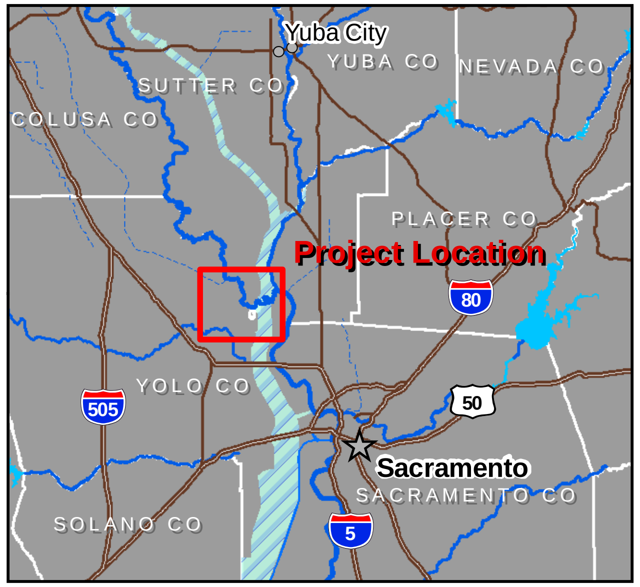
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend	
A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

April 30, 2012



USGS Quadrangles (100k):
SACRAMENTO, 1994



Map Legend

Project Levees: NLD SYSTEM SEGMENTS
(Levee Inspection System Code)

- Knights Landing Ridge Cut - Unit 2 (KNT2)
- Service Area 6 - Yolo County (S6YC)
- Yolo Bypass West Levee - Unit 1 (YBW1)
- Other Federal Levee
- Flood Control Structure
- ▨ Yolo Bypass
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

KNIGHTS LANDING - SERVICE AREA 6 - YOLO BYPASS WEST

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JAN 12 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Littlejohn Creek left bank – Unit 1 Levee System on January 28-29, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Littlejohn Creek left bank – Unit 1 Levee System is rated Minimally Acceptable. Encroachments, erosion/bank caving, vegetation growth and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Littlejohn Creek left bank – Unit 1 Levee System is active in the PL 84-99 RP.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

Rick L. Poeppelman

Rick L. Poeppelman, P.E.
Levee Safety Officer
Chief, Engineering Division

Enclosures

System: Littlejohn Creek left bank -
Unit 1 Levee System
System Rating: Minimally Acceptable
Approved SWIF/LOI: No
PL 84-99 RP Eligibility: Active

		Littlejohn Creek - Unit 1, left bank (LJN1)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	A							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	M							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	NA							
	Settlement	M							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JAN 12 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Littlejohn Creek right bank – Unit 2 Levee System on January 29, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Littlejohn Creek right bank – Unit 2 Levee System is rated Minimally Acceptable. Encroachments, vegetation growth and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Littlejohn Creek right bank – Unit 2 Levee System is active in the PL 84-99 RP.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

Rick L. Poeppelman

Rick L. Poeppelman, P.E.
Levee Safety Officer
Chief, Engineering Division

Enclosures

	System: Littlejohn Creek right bank - Unit 2 Levee System System Rating: Minimally Acceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Active	Littlejohn Creek - Unit 2, right bank (LJN2)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	A							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	NA							
	Settlement	M							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	M							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Received Electronically
by CVFPB on 5/7/2013

Operations and Readiness Branch

MAR 15 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between August 20th and August 21st in 2012, inspectors Bob Murakami, Gene Vaughan, Paul Risher, and Justin Hake from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD)-Units 1, 4, 6, and 12 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The Report Card, Map, and Levee Inspection Report with photos serve as a summary of the inspection.

The system is comprised of 4 segments:

Segment Names
LSJLD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)
LSJLD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)
LSJLD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L01C)
LSJLD - Unit 12, Mariposa Bypass south levee (L012)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the LSJLD Units 1, 4, 6, and 12 system is rated Unacceptable and is Inactive in the PL 84-99 Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the report card). These items should be corrected immediately.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, sod cover, depressions/rutting, cracking, and slab and monolith joints (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition or the items will be noted as pink during the next inspection and will cause the system to become inactive.

When inspecting an encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the conditions in the sponsor issued encroachment permit are being met.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Bob Murakami (916) 557-6738 or Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the California Emergency Management Agency, FEMA Region IX, Merced County Office of Emergency Services, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee Inspection Reports with photos

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF
Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between August 20th and August 21st in 2012, inspectors Bob Murakami, Gene Vaughan, Paul Risher, and Justin Hake from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD)-Units 1, 4, 6, and 12 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The Report Card, Map, and Levee Inspection Report with photos serve as a summary of the inspection.

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Segment Names
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LSJLD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)
LSJLD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L01C)
LSJLD - Unit 12, Mariposa Bypass south levee (L012)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
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U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the LSJLD Units 1, 4, 6, and 12 system is rated Unacceptable and is Inactive in the PL 84-99 Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the report card). These items should be corrected immediately.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, sod cover, depressions/rutting, cracking, and slab and monolith joints (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition or the items will be noted as pink during the next inspection and will cause the system to become inactive.

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If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Bob Murakami (916) 557-6738 or Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the California Emergency Management Agency, FEMA Region IX, Merced County Office of Emergency Services, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:
1) Report card
2) Map
3) Levee Inspection Reports with photos

CEI 8/21/2012 LSJLD-Units 1, 4, 6, and 12

Murakami

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Faustino

Mahoney

Leady

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

SPK NLD

\\spk-netapp1\coopublic\FP&Nav\ICW\!_Inspections_System Folders\LSJLD-Units 1, 4, 6, and 12\2012 CEI UI\Reports\CoverLetter_LSJLD-Units 1, 4, 6, and 12_1.docx

	System LSJLD-Units 1, 4, 6, and 12 Unacceptable - Inactive	LSJLD- U 1 South, San Joaquin River right bank above Mariposa Bypass (L01C)	LSJLD- U 4, San Joaquing River left bank above Mariposa Slough-Eastside Bypass (L004)	LSJLD- U 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	LSJLD- U 12, Mariposa Bypass south levee (L012)
General	Operations and Maintenance Manuals	A	A	A	A
	Emergency Supplies and Equipment	A	A	A	A
	Flood Preparedness and Training	A	A	A	A
Levee Embankments	Unwanted Vegetation Growth	U	U	U	U
	Sod Cover	NA	U	U	NA
	Encroachments	U	U	U	U
	Closure Structures	NA	NA	NA	NA
	Slope Stability	A	M	A	A
	Erosion/Bank Caving	A	A	U	A
	Settlement	A	A	A	A
	Depressions/Rutting	A	M	U	U
	Cracking	A	A	U	A
	Animal Control	U	U	U	U
	Culverts/Discharge Pipes	NA	NA	NA	NA
	Riprap Revetments & Bank Protection	NA	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA	NA
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA
	Seepage	A	A	A	A
Flood Damage Reduction Channels	Vegetation and Obstructions	U	A	A	A
	Shoaling	A	A	A	A
	Encroachments	U	A	U	U
	Erosion	M	A	A	M
	Concrete Surfaces	NA	NA	A	A
	Tilting, Sliding, or Settlement of Concrete	NA	NA	NA	NA
	Foundation of Concrete Structures	NA	NA	NA	NA
	Slab and Monolith Joints	U	NA	NA	NA
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA
	Riprap Revetments & Banks	NA	NA	NA	NA
	Revetments other than Riprap	NA	NA	A	NA

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

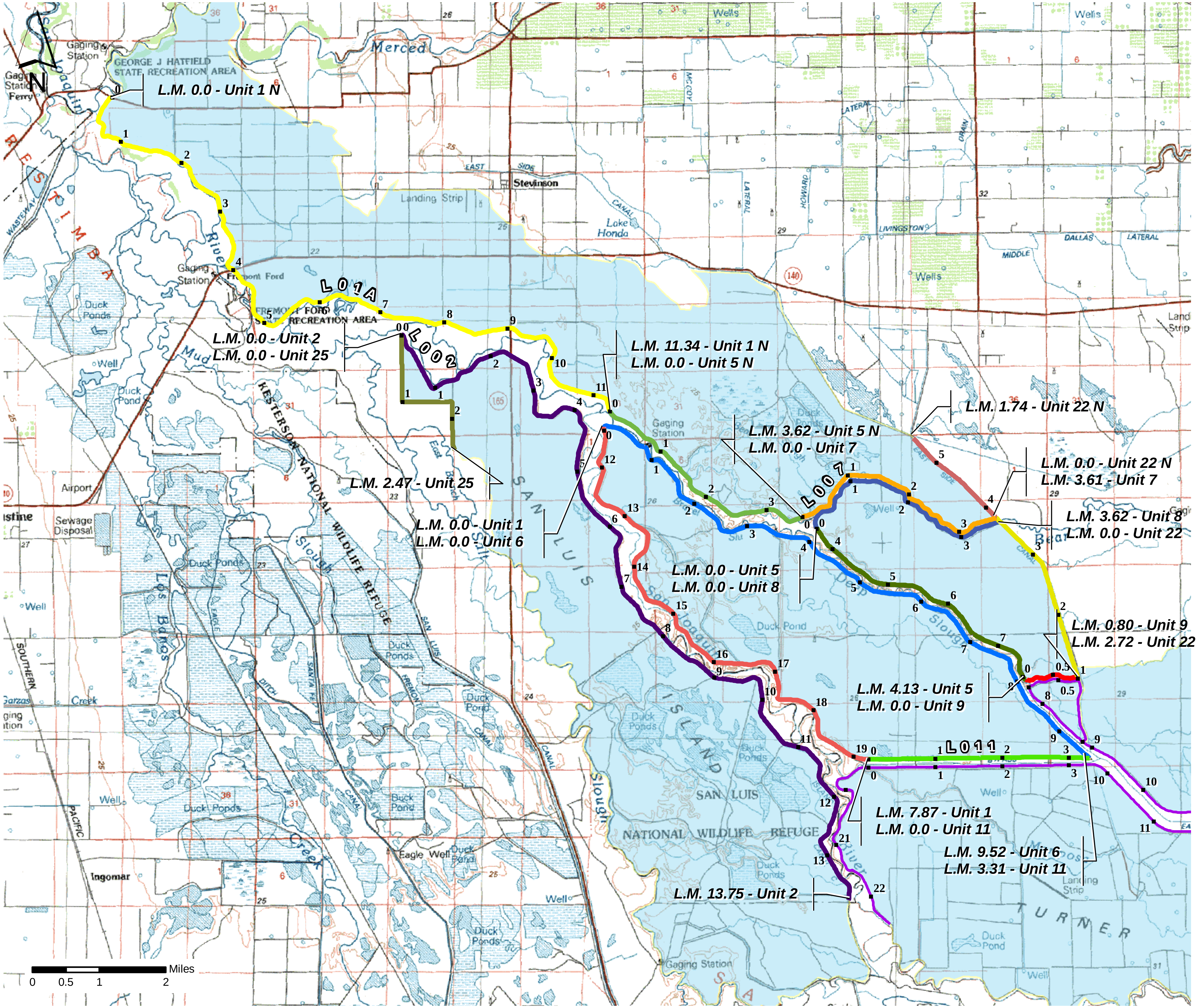
Not Likely to Prevent Performance In Next Flood Event/Active

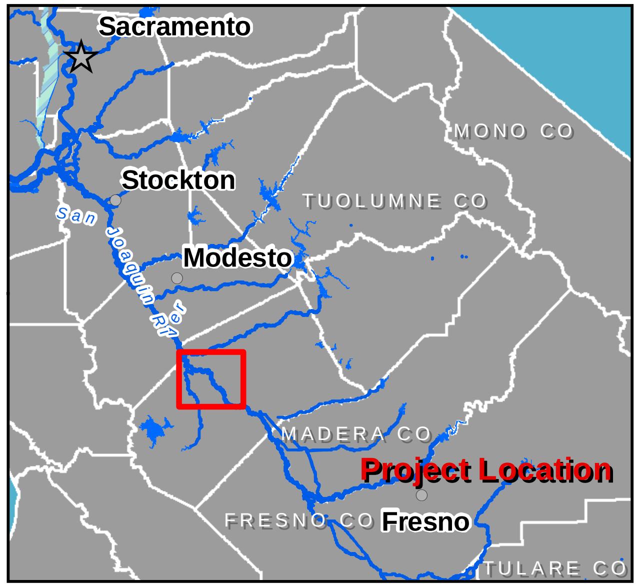
The worst rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

11/19/2012





Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- Unit 1 N, San Joaquin River R bank (L01A)
- Unit 1, San Joaquin River R bank
- Unit 11, Mariposa Bypass N levee (L011)
- Unit 2, San Joaquin River L bank (L002)
- Unit 22 N, East Side Canal L bank (L22A)
- Unit 22, East Side Canal L bank (L22B)
- Unit 25, Salt Slough (L025)
- Unit 5 N, Bear Creek-Deep Slough R bank (L05A)
- Unit 5, Deep Slough R bank above bear Creek (L05B)
- Unit 6, Deep Slough L bank (L06A)
- Unit 7, Bear Creek R bank (L007)
- Unit 8, Bear Creek L bank (L008)
- Unit 9, Owens Creek R bank (L009)
- Other Federal Levees
- Protection Area
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN
LEVEE DISTRICT
MAP - 1

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass/LSJLD-Units 1, 4, 6, and 12

Public Sponsor(s): Central Valley Flood Protection board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Bob Murakami, Gene Vaughan, Paul Rischer, Justin Hake Date of Inspection: 08/20/2012 - 8/21/2012

Inspection Report Prepared By: Kaylee Peterson Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______ Date of ITR: ______

Final Approval By: ______ Date Approved: ______

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached. Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	Periodic Inspections
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	U	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	M	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	U	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Slab and Monolith Joints		U	Joint gaps of 1.5 to 2.5 inches on south wing walls. Vertical displacement of 2" and lateral of 1" to 2.5". May be missing expansion joint material. : Repair joints and monitor for movement.	37.201420 ° -120.755218 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Animal Control		U	Large rodent holes up to 36" deep. On landside only. : Remove rodents and repair holes.	37.200977 ° -120.755458 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		U	Two open pipes through top of levee. Invert below crown. Levee crown rises over pipes. : Remove or confirm permit status.	37.200962 ° -120.756718 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		U	Large pipe though levee with flap gate propped open. Gangway from levee crest to gate. Headwall and wing walls. Permit # 5983 : Close gate during high water.	37.200950 ° -120.756750 °	0.000000 ° 0.000000 °	0004 Y
5			Flood Damage Reduction Channels	Encroachments		U	Concrete rubble in floodway. Some being used for erosion protection at outlet of two 24" pipes (site L01C_2012_a_0003). : Remove.	37.201043 ° -120.757068 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Encroachments		U	Barbed wire fence on landside levee slope. About 175 feet long. : Remove or confirm permit status.	37.200922 ° -120.757087 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		U	Pipe through levee with flapgate on water side and half headwall. Full headwall on landside. : Remove or confirm permit status.	37.199437 ° -120.760285 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		U	Pipe through levee. Headwalls both sides with waterside flap gate. Half wall on W/S. Minor erosion above pipe on waterside slope. : Remove or confirm permit status.	37.197468 ° -120.764070 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Animal Control		U	Several small holes on waterside slope and crown. Appears old. : Repair holes.	37.196225 ° -120.761492 °	0.000000 ° 0.000000 °	0009 Y
10			Floodwalls	Encroachments		U	Pipe though levee with headwall on landside and half headwall, flap gate, and concrete apron on water side. : Remove or confirm permit status.	37.194655 ° -120.759818 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Encroachments		M	Fence and gate across levee. : Remove or confirm permit status.	37.193783 ° -120.760045 °	0.000000 ° 0.000000 °	0011 Y
12			Flood Damage Reduction Channels	Encroachments		U	Fence across floodway. : Remove or confirm permit status.	37.193805 ° -120.760028 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Encroachments		U	3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water. : Remove or confirm permit status. Provide positive closure.	37.193537 ° -120.760327 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments		U	Utility pole and guy wire. : Remove or confirm permit status.	37.193523 ° -120.760367 °	0.000000 ° 0.000000 °	0014 Y
15			Flood Damage Reduction Channels	Vegetation and Obstructions		U	Extensive vegetation in floodway. Thick brush up to 5 feet tall and mature trees. Typical of reach. : Ensure project can pass design flow.	37.191557 ° -120.761667 °	0.000000 ° 0.000000 °	0015 Y
16			Levee Embankments	Unwanted Vegetation Growth		U	Several mature trees within 15 feet of water side projected toe. : NA	37.189895 ° -120.763108 °	0.000000 ° 0.000000 °	0016 Y
17			Flood Damage Reduction Channels	Erosion		M	Bank erosion partially stabilized by willows on outside bend of meander, may theaten here if it continues. : NA	37.187188 ° -120.764043 °	0.000000 ° 0.000000 °	0017

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L01C_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
18			Levee Embankments	Encroachments		M	Irrigation canal very near 15 feet from projected toe. : Check dimensions.	37.193260 ° -120.760620 °	37.186730 ° -120.764430 °	0018 Y
19			Flood Damage Reduction Channels	Encroachments		U	Fencing across floodway, may be a corral. : Remove or confirm permit status.	37.183777 ° -120.763795 °	0.000000 ° 0.000000 °	0019 Y
20			Levee Embankments	Animal Control		U	Six inch diameter holes up to 36 inches deep on both sides of levee and crown. : Control rodents and repair holes.	37.182890 ° -120.763202 °	0.000000 ° 0.000000 °	0020 Y
21			Flood Damage Reduction Channels	Encroachments		U	Fence across floodway. : Remove.	37.182365 ° -120.763088 °	0.000000 ° 0.000000 °	0021 Y
22			Levee Embankments	Animal Control		U	36 inch deep burrows. Holes on both sides of levee. : Control rodents and repair holes.	37.182350 ° -120.763082 °	0.000000 ° 0.000000 °	0022 Y
23			Levee Embankments	Animal Control		U	Several burrows 5 inches diameter and up to 4 feet deep on waterside and crown. Several cubic feet of material outside of holes. : Control rodents and repair holes.	37.179285 ° -120.761700 °	0.000000 ° 0.000000 °	0023 Y
24			Levee Embankments	Encroachments		U	Pipe though levee. May have flap gate. Landside not visible. : Remove or confirm permit status. Provide positive closure.	37.179288 ° -120.761682 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Encroachments		M	Agricultural activity cut ten inches into landside levee slope. : Repair slope.	37.178700 ° -120.761157 °	0.000000 ° 0.000000 °	0025 Y
26			Levee Embankments	Encroachments		U	Canal within 15 feet of projected levee toe. : Remove or confirm permit status.	37.178690 ° -120.761170 °	37.176200 ° -120.756850 °	0026 Y
27			Levee Embankments	Encroachments		U	Pipe through levee. Landside not visible. No headwall, but flap gate on waterside. : Remove or confirm permit status.	37.176188 ° -120.756835 °	0.000000 ° 0.000000 °	0027 Y
28			Levee Embankments	Encroachments		U	Pipe through levee. No headwalls. Landside submerged in canal. Flap gate on water side. : Remove or confirm permit status.	37.171180 ° -120.754547 °	0.000000 ° 0.000000 °	0028 Y
29			Levee Embankments	Encroachments		U	Barbed wire fence on water side slope. : Remove or confirm permit status.	37.193540 ° -120.760320 °	37.166870 ° -120.749940 °	0029 Y
30			Levee Embankments	Encroachments		U	Irrigation canal within 15 feet of projected landside toe. : Relocate or confirm permit status.	37.171850 ° -120.754610 °	37.166790 ° -120.749700 °	0030 Y

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L01C_2012_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Slab and Monolith Joints

Rated Item: 8. Slab and Monolith Joints; Rating: Unacceptable Yellow; Remarks: Joint gaps of 1.5 to 2.5 inches on south wing walls. Vertical displacement of 2" and lateral of 1" to 2.5". May be missing expansion joint material.

USACE_CESPK_L01C_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.201420 ° -120.755218 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Slab and Monolith Joints

Rated Item: 8. Slab and Monolith Joints; Rating: Unacceptable Yellow; Remarks: Joint gaps of 1.5 to 2.5 inches on south wing walls. Vertical displacement of 2" and lateral of 1" to 2.5". May be missing expansion joint material.

USACE_CESPK_L01C_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.201420 ° -120.755218 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Large rodent holes up to 36" deep. On landside only.

USACE_CESPK_L01C_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.200977 ° -120.755458 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Large rodent holes up to 36" deep. On landside only.

USACE_CESPK_L01C_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.200977 ° -120.755458 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Two open pipes through top of levee. Invert below crown. Levee crown rises over pipes.

USACE_CESPK_L01C_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.200962 ° -120.756718 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Two open pipes through top of levee. Invert below crown. Levee crown rises over pipes.

USACE_CESPK_L01C_2012_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
37.200962 ° -120.756718 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Large pipe though levee with flap gate propped open. Gangway from levee crest to gate. Headwall and wing walls. Permit # 5983

USACE_CESPK_L01C_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.200950 ° -120.756750 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Large pipe though levee with flap gate propped open. Gangway from levee crest to gate. Headwall and wing walls. Permit # 5983

USACE_CESPK_L01C_2012_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.200950 ° -120.756750 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Large pipe though levee with flap gate propped open. Gangway from levee crest to gate. Headwall and wing walls. Permit # 5983

USACE_CESPK_L01C_2012_a_0004_3.jpg

GPS Latitude/Longitude	
Start	End
37.200950 ° -120.756750 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Concrete rubble in floodway. Some being used for erosion protection at outlet of two 24" pipes (site L01C_2012_a_0003).

USACE_CESPK_L01C_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.201043 ° -120.757068 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Concrete rubble in floodway. Some being used for erosion protection at outlet of two 24" pipes (site L01C_2012_a_0003).

USACE_CESPK_L01C_2012_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
37.201043 ° -120.757068 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fence on landside levee slope. About 175 feet long.

USACE_CESPK_L01C_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.200922 ° -120.757087 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with flapgate on water side and half headwall. Full headwall on landside.

USACE_CESPK_L01C_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.199437 ° -120.760285 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with flapgate on water side and half headwall. Full headwall on landside.

USACE_CESPK_L01C_2012_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.199437 ° -120.760285 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Headwalls both sides with waterside flap gate. Half wall on W/S. Minor erosion above pipe on waterside slope.

USACE_CESPK_L01C_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.197468 ° -120.764070 °	0.000000 ° 0.000000 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Headwalls both sides with waterside flap gate. Half wall on W/S. Minor erosion above pipe on waterside slope.

USACE_CESPK_L01C_2012_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
37.197468 ° -120.764070 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Several small holes on waterside slope and crown. Appears old.

USACE_CESPK_L01C_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.196225 ° -120.761492 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Floodwalls
Item	Encroachments

Rated Item: 2. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwall on landside and half headwall, flap gate, and concrete apron on water side.

USACE_CESPK_L01C_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.194655 ° -120.759818 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Floodwalls
Item	Encroachments

Rated Item: 2. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwall on landside and half headwall, flap gate, and concrete apron on water side.

USACE_CESPK_L01C_2012_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
37.194655 ° -120.759818 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fence and gate across levee.

USACE_CESPK_L01C_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.193783 ° -120.760045 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fence and gate across levee.

USACE_CESPK_L01C_2012_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.193783 ° -120.760045 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence across floodway.

USACE_CESPK_L01C_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.193805 ° -120.760028 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: 3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water.

USACE_CESPK_L01C_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.193537 ° -120.760327 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: 3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water.

USACE_CESPK_L01C_2012_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
37.193537 ° -120.760327 °	0.000000 ° 0.000000 °

🟥 Rating³: U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: 3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water.

USACE_CESPK_L01C_2012_a_0013_3.jpg

GPS Latitude/Longitude	
Start	End
37.193537 ° -120.760327 °	0.000000 ° 0.000000 °

🟥 Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: 3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water.

USACE_CESPK_L01C_2012_a_0013_4.jpg

GPS Latitude/Longitude	
Start	End
37.193537 ° -120.760327 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: 3 open pipes visible thru top of levee. 4th pipe was mentioned in the levee log but is not visible. # 1 is CMP with flap gate. #2 is steel with flapgate and pump on L/S. #3 is not connected on L/S and open on W/S. #4 is 10.5' below crown under water.

USACE_CESPK_L01C_2012_a_0013_5.jpg

GPS Latitude/Longitude	
Start	End
37.193537 ° -120.760327 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility pole and guy wire.

USACE_CESPK_L01C_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.193523 ° -120.760367 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Extensive vegetation in floodway. Thick brush up to 5 feet tall and mature trees. Typical of reach.

USACE_CESPK_L01C_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.191557 ° -120.761667 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Extensive vegetation in floodway. Thick brush up to 5 feet tall and mature trees. Typical of reach.

USACE_CESPK_L01C_2012_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
37.191557 ° -120.761667 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Several mature trees within 15 feet of water side projected toe.

USACE_CESPK_L01C_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.189895 ° -120.763108 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Several mature trees within 15 feet of water side projected toe.

USACE_CESPK_L01C_2012_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
37.189895 ° -120.763108 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Irrigation canal very near 15 feet from projected toe.

USACE_CESPK_L01C_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.193260 ° -120.760620 °	37.186730 ° -120.764430 °
Rating³: M	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Irrigation canal very near 15 feet from projected toe.

USACE_CESPK_L01C_2012_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.193260 ° -120.760620 °	37.186730 ° -120.764430 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fencing across floodway, may be a corral.

USACE_CESPK_L01C_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.183777 ° -120.763795 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Six inch diameter holes up to 36 inches deep on both sides of levee and crown.

USACE_CESPK_L01C_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.182890 ° -120.763202 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Six inch diameter holes up to 36 inches deep on both sides of levee and crown.

USACE_CESPK_L01C_2012_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
37.182890 ° -120.763202 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence across floodway.

USACE_CESPK_L01C_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.182365 ° -120.763088 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: 36 inch deep burrows. Holes on both sides of levee.

USACE_CESPK_L01C_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.182350 ° -120.763082 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: 36 inch deep burrows. Holes on both sides of levee.

USACE_CESPK_L01C_2012_a_0022_2.jpg

GPS Latitude/Longitude	
Start	End
37.182350 ° -120.763082 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0022
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: 36 inch deep burrows. Holes on both sides of levee.

USACE_CESPK_L01C_2012_a_0022_3.jpg

GPS Latitude/Longitude	
Start	End
37.182350 ° -120.763082 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0023
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several burrows 5 inches diameter and up to 4 feet deep on waterside and crown. Several cubic feet of material outside of holes.

USACE_CESPK_L01C_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.179285 ° -120.761700 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0023
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several burrows 5 inches diameter and up to 4 feet deep on waterside and crown. Several cubic feet of material outside of holes.

USACE_CESPK_L01C_2012_a_0023_2.jpg

GPS Latitude/Longitude	
Start	End
37.179285 ° -120.761700 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe though levee. May have flap gate. Landside not visible.

USACE_CESPK_L01C_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.179288 ° -120.761682 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Agricultural activity cut ten inches into landside levee slope.

USACE_CESPK_L01C_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.178700 ° -120.761157 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Canal within 15 feet of projected levee toe.

USACE_CESPK_L01C_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.178690 ° -120.761170 °	37.176200 ° -120.756850 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Landside not visible. No headwall, but flap gate on waterside.

USACE_CESPK_L01C_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.176188 ° -120.756835 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. No headwalls. Landside submerged in canal. Flap gate on water side.

USACE_CESPK_L01C_2012_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
37.171180 ° -120.754547 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fence on water side slope.

USACE_CESPK_L01C_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.193540 ° -120.760320 °	37.166870 ° -120.749940 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1 south, San Joaquin River right bank above Mariposa Bypass (L01C)	Right	3.29	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fence on water side slope.

USACE_CESPK_L01C_2012_a_0029_2.jpg

GPS Latitude/Longitude	
Start	End
37.193540 ° -120.760320 °	37.166870 ° -120.749940 °
Rating³: U	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal within 15 feet of projected landside toe.

USACE_CESPK_L01C_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
37.171850 ° -120.754610 °	37.166790 ° -120.749700 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass/LSJLD-Units 1, 4, 6, and 12

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Bob Murakami, Gene Vaughan, Paul Risher, Justin Hake Date of Inspection: 08/20/2012 - 08/21/2012

Inspection Report Prepared By: Kaylee Peterson Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______ Date of ITR: ______

Final Approval By: ______ Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached. Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	U	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	M	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	M	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		U	Landside canal at toe of levee. : Confirm permit status.	37.096640 ° -120.578210 °	37.102310 ° -120.582860 °	0001 Y
2			Levee Embankments	Encroachments		U	Canal is eroding landside toe of levee causing bank stability problems. : Confirm permit status.	37.097176 ° -120.578225 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Depressions/ Rutting		M	Rutting from truck tires less than 6 inches deep. : Fill depression and discontinue vehicular use of levee slope.	37.102338 ° -120.582443 °	0.000000 ° 0.000000 °	0004 Y
4			Levee Embankments	Animal Control		M	Rodent holes on landside slope. Appear older and 2 inches in diameter. : Control rodents and repair holes.	37.102380 ° -120.582420 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Animal Control		U	Rodent burrows on both slopes of levee. More than 5 in 25 feet. : Control rodents and repair holes.	37.102875 ° -120.584300 °	0.000000 ° 0.000000 °	0006 Y
6			Levee Embankments	Sod Cover		U	Surface rilling from runoff. Nine inches deep at waterside toe of levee. : Repair surface erosion.	37.103620 ° -120.586292 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Encroachments		U	Irrigation control structure. Some erosion noted on project levee. : Confirm permit status. Monitor erosion.	37.103593 ° -120.586310 °	0.000000 ° 0.000000 °	0008 Y
8			Levee Embankments	Unwanted Vegetation Growth		U	Stand of cottonwood trees within 15 feet of landside toe. : Remove unwanted vegetation.	37.109117 ° -120.590815 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation greater than 12 inches within 15 feet of levee toe. Blocking view of water and possible pipe encroachment. : Remove unwanted vegetation.	37.109907 ° -120.590565 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Depressions/ Rutting		M	Depression in waterside slope about, six inches deep. : Repair depression.	37.109887 ° -120.590633 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Animal Control		U	Several rodent burrows about 7 inches in diameter within 25 feet on landside. Smaller burrows found on waterside, up to 36 inches deep, significant mounds. : Control rodents and repair holes.	37.110988 ° -120.591112 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Slope Stability		M	Oversteepened slope. Agricultural activity at toe and rodents on slope. : Repair slope to as-built line and grade.	37.110923 ° -120.591117 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments		U	DWR gage station on water side. : Confirm permit status.	37.111450 ° -120.590633 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments		U	Inlet to San Joaquin River. Control structure headgate (4 gates). Inlet and outlet silted and vegetated. Some spalling on waterside headwall. Includes monitoring well in center of levee. Inlet was intentionally backfilled (per LMA). : Repair spalling. Video inspect pipes through levee.	37.111442 ° -120.590637 °	0.000000 ° 0.000000 °	0015 Y
15			Levee Embankments	Encroachments		M	Two couches on waterside slope. : Remove debris.	37.112370 ° -120.589620 °	0.000000 ° 0.000000 °	0016 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L004_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

Report Created on Monday, November 19, 2012 15:08

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Landside canal at toe of levee.

USACE_CESPK_L004_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.096640 ° -120.578210 °	37.102310 ° -120.582860 °
Rating³:	U

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Canal is eroding landside toe of levee causing bank stability problems.

USACE_CESPK_L004_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.097176 ° -120.578225 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Canal is eroding landside toe of levee causing bank stability problems.

USACE_CESPK_L004_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.097176 ° -120.578225 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Rutting from truck tires less than 6 inches deep.

USACE_CESPK_L004_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.102338 ° -120.582443 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on landside slope. Appear older and 2 inches in diameter.

USACE_CESPK_L004_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.102380 ° -120.582420 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent burrows on both slopes of levee. More than 5 in 25 feet.

USACE_CESPK_L004_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.102875 ° -120.584300 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent burrows on both slopes of levee. More than 5 in 25 feet.

USACE_CESPK_L004_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.102875 ° -120.584300 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent burrows on both slopes of levee. More than 5 in 25 feet.

USACE_CESPK_L004_2012_a_0006_3.jpg

GPS Latitude/Longitude	
Start	End
37.102875 ° -120.584300 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface rilling from runoff. Nine inches deep at waterside toe of levee.

USACE_CESPK_L004_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.103620 ° -120.586292 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation control structure. Some erosion noted on project levee.

USACE_CESPK_L004_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.103593 ° -120.586310 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation control structure. Some erosion noted on project levee.

USACE_CESPK_L004_2012_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
37.103593 ° -120.586310 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Stand of cottonwood trees within 15 feet of landside toe.

USACE_CESPK_L004_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.109117 ° -120.590815 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation greater than 12 inches within 15 feet of levee toe. Blocking view of water and possible pipe encroachment.

USACE_CESPK_L004_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.109907 ° -120.590565 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Depression in waterside slope about, six inches deep.

USACE_CESPK_L004_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.109887 ° -120.590633 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several rodent burrows about 7 inches in diameter within 25 feet on landside. Smaller burrows found on waterside, up to 36 inches deep, significant mounds.

USACE_CESPK_L004_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.110988 ° -120.591112 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several rodent burrows about 7 inches in diameter within 25 feet on landside. Smaller burrows found on waterside, up to 36 inches deep, significant mounds.

USACE_CESPK_L004_2012_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.110988 ° -120.591112 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several rodent burrows about 7 inches in diameter within 25 feet on landside. Smaller burrows found on waterside, up to 36 inches deep, significant mounds.

USACE_CESPK_L004_2012_a_0012_3.jpg

GPS Latitude/Longitude	
Start	End
37.110988 ° -120.591112 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several rodent burrows about 7 inches in diameter within 25 feet on landside. Smaller burrows found on waterside, up to 36 inches deep, significant mounds.

USACE_CESPK_L004_2012_a_0012_4.jpg

GPS Latitude/Longitude	
Start	End
37.110988 ° -120.591112 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Minimally Acceptable; Remarks: Oversteepened slope. Agricultural activity at toe and rodents on slope.

USACE_CESPK_L004_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.110923 ° -120.591117 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: DWR gage station on water side.

USACE_CESPK_L004_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.111450 ° -120.590633 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Inlet to San Joaquin River. Control structure headgate (4 gates). Inlet and outlet silted and vegetated. Some spalling on waterside headwall. Includes monitoring well in center of levee. Inlet was intentionally backfilled (per LMA).

USACE_CESPK_L004_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.111442 ° -120.590637 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number[1]	0015
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Inlet to San Joaquin River. Control structure headgate (4 gates). Inlet and outlet silted and vegetated. Some spalling on waterside headwall. Includes monitoring well in center of levee. Inlet was intentionally backfilled (per LMA).

USACE_CESPK_L004_2012_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
37.111442 ° -120.590637 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0015
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Inlet to San Joaquin River. Control structure headgate (4 gates). Inlet and outlet silted and vegetated. Some spalling on waterside headwall. Includes monitoring well in center of levee. Inlet was intentionally backfilled (per LMA).

USACE_CESPK_L004_2012_a_0015_3.jpg

GPS Latitude/Longitude	
Start	End
37.111442 ° -120.590637 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 4, San Joaquin River left bank above Mariposa Slough-Eastside Bypass (L004)	Left	1.41	USACE	8/20/2012 8/20/2012	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Two couches on waterside slope.

USACE_CESPK_L004_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.112370 °	0.000000 °
-120.589620 °	0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass/LSJLD-Units 1, 4, 6, and 12

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Bob Murakami, Gene Vaughan, Paul Risher, Justin Hake Date of Inspection: 08/20/2012 - 08/21/2012

Inspection Report Prepared By: Kaylee Peterson Date Report Prepared: ________

Internal Technical Review (for Periodic Inspections) By: ________ Date of ITR: ________

Final Approval By: ________ Date Approved: ________

Type of Inspection:
☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:
☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached. Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	U	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**U**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Flume in Eastside Bypass Channel with grouted stone bank protection and 6 inlets. Vegetation impeding flow. Some minor concrete cracking. Old tires and debris on levee slope. : Locate flashboards. Remove debris.	37.112533 ° -120.588957 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Inlet to Sand Slough. Culvert with gate valve structure on waterside hinge. Opening not visible due to vegetation. : Video inspect or pressure test pipe.	37.112850 ° -120.588723 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		M	Fencing on landside slope (barbed wire) also crosses levee at gate. : Remove, relocate or confirm permit status of fencing.	37.113683 ° -120.588230 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		M	Barbed wire fencing on landside slope. Also crosses levee at entrance gate. : Remove, relocate fencing, or confirm permit status.	37.113677 ° -120.588245 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		U	Start point of irrigation canal at toe of landside. : Relocate canal out of easement, or confirm permit status.	37.113682 ° -120.588222 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Encroachments		U	Concrete headwall with CM pipe though levee. Control gate on waterside hinge. : confirm permit status.	37.118130 ° -120.586793 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		U	Small irrigation canal at landside toe. : Relocate or confirm permit status.	37.113700 ° -120.588210 °	37.117810 ° -120.586880 °	0007 Y
8			Levee Embankments	Encroachments		U	Permitted pipe though levee, with closure gate at landside hinge. Permit #3040. : Video inspect pipe through levee.	37.119278 ° -120.587198 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Animal Control		U	Several small burrows on both sides of levee. : Control rodents and repair holes.	37.120462 ° -120.587698 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Encroachments		M	Line of poles crossing floodway. Formerly a fence? : Remove or confirm permit status.	37.126468 ° -120.590240 °	0.000000 ° 0.000000 °	0010 Y
11			Flood Damage Reduction Channels	Encroachments		U	Barbed wire fencing across floodway. : Remove or confirm permit status.	37.127818 ° -120.590812 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Encroachments		U	Large irrigation canal near landside toe of levee. : Relocate or confirm permit status.	37.117880 ° -120.586860 °	37.128180 ° -120.590960 °	0012 Y
13			Levee Embankments	Encroachments		U	Ponding water at landside toe of levee. Appears to be from overflow of irrigation canal. 80 feet long. : Drain water. Repair canal low point.	37.130075 ° -120.591807 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments		U	Endpoint of fencing at landside toe. : NA	37.141765 ° -120.600240 °	0.000000 ° 0.000000 °	0014
15			Levee Embankments	Erosion/ Bank Caving		U	Erosion on waterside slope up to 16 inches deep and 38 feet long. : Repair damaged area to as-built lines and grade.	37.141758 ° -120.600292 °	0.000000 ° 0.000000 °	0015 Y
16			Levee Embankments	Encroachments		U	Water gauging station with stilling well. Approach bridge and utility pole line crossing appears less than 20 feet above crown. : Confirm permit status.	37.147300 ° -120.605377 °	0.000000 ° 0.000000 °	0016 Y
17			Levee Embankments	Erosion/ Bank Caving		U	Unknown distance of erosion on waterside slope in excess of 100 feet, measured 12 inches deep. Cannot see due to vegetation. : Repair to as-built lines and grade.	37.148660 ° -120.606580 °	0.000000 ° 0.000000 °	0017 Y
18			Levee Embankments	Encroachments		U	Irrigation canal siphon under levee with closure structure on waterside hinge. Permit #3040 : Video inspect pipe through levee.	37.149688 ° -120.607617 °	0.000000 ° 0.000000 °	0018 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.
[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06B_2012_a_####.
[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
19			Levee Embankments	Encroachments		U	Guy wire in landside levee slope. : Remove or confirm permit status.	37.150645 ° -120.608540 °	0.000000 ° 0.000000 °	0019 Y
20			Levee Embankments	Erosion/ Bank Caving		M	Up to 10 inches deep erosion on waterside slope. 50 feet long. : Repair to as-built lines and grade.	37.151695 ° -120.609862 °	0.000000 ° 0.000000 °	0020 Y
21			Levee Embankments	Encroachments		U	Pipe though levee. Could not find waterside inlet. Closure structure on landside. : Confirm permit status. Ensure positive closure on WS.	37.155535 ° -120.615268 °	0.000000 ° 0.000000 °	0021 Y
22			Flood Damage Reduction Channels	Encroachments		U	Low water crossing with barbed wire fencing across floodway. : Remove or confirm permit status of fencing.	37.156472 ° -120.616610 °	0.000000 ° 0.000000 °	0022 Y
23			Levee Embankments	Encroachments		U	Undocumented pipe though levee. Headwall on landside, inlet not found on waterside. : Confirm permit status. Ensure positive closure on WS.	37.157065 ° -120.617418 °	0.000000 ° 0.000000 °	0023 Y
24			Levee Embankments	Sod Cover		U	Surface damage from cattle and ATV tracks on landside slope. About 150 feet long. : Repair discontinue use.	37.157133 ° -120.617507 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Encroachments		U	Line of utility poles within 15 feet of landside levee toe. : Confirm permit status.	37.142630 ° -120.601050 °	37.157130 ° -120.617500 °	0025 Y
26			Levee Embankments	Erosion/ Bank Caving		U	Erosion and bank caving exacerbated by cattle trail. Up to 24, inches deep, 115 feet long. Due to meander in channel. : Repair to as-built lines and grade.	37.162080 ° -120.628250 °	0.000000 ° 0.000000 °	0026 Y
27			Levee Embankments	Encroachments		U	Irrigation ditch at landside toe. : Relocate or confirm permit status.	37.160340 ° -120.623870 °	37.164070 ° -120.632320 °	0027 Y
28			Levee Embankments	Sod Cover		U	Surface damage appears to be from cattle. : Discontinue use and repair surface.	37.158620 ° -120.619740 °	37.157490 ° -120.618240 °	0028 Y
29			Levee Embankments	Encroachments		M	Electric fence across levee. : Remove or confirm permit status.	37.167805 ° -120.636300 °	0.000000 ° 0.000000 °	0029 Y
30			Flood Damage Reduction Channels	Encroachments		U	Electric fence across floodway. : Remove or confirm permit status.	37.167887 ° -120.636385 °	0.000000 ° 0.000000 °	0030 Y
31			Levee Embankments	Encroachments		M	Barbed wire fence at landside toe. : Remove or confirm permit status.	37.142840 ° -120.601290 °	37.167900 ° -120.636400 °	0031 Y
32			Levee Embankments	Erosion/ Bank Caving		M	Minor erosion made worse by cattle, less than 12 inches deep. At least 75 feet length. : Repair to as-built lines and grade.	37.171660 ° -120.650763 °	0.000000 ° 0.000000 °	0032 Y
33			Levee Embankments	Encroachments		M	Electric fence on waterside of crown. : Remove or confirm permit status.	37.167950 ° -120.636450 °	37.171680 ° -120.652140 °	0033 Y
34			Flood Damage Reduction Channels	Encroachments		U	Electric fence across floodway. Undetermined length. : Remove or confirm permit status.	37.171680 ° -120.652128 °	0.000000 ° 0.000000 °	0034 Y
35			Levee Embankments	Encroachments		M	Utility line crossing over levee. Pole on berm on waterside, but not in levee prism. : Confirm permit status.	37.171697 ° -120.655040 °	0.000000 ° 0.000000 °	0035 Y
36			Levee Embankments	Encroachments		U	Gate valve riser on waterside hinge. Possible pipe through levee. : Confirm permit status. Video inspect pipes through levee. Ensure positive closure on WS.	37.171703 ° -120.654985 °	0.000000 ° 0.000000 °	0036 Y
37			Levee Embankments	Encroachments		U	Pump station owned by USFWS, with concrete pad and chain link fence. : Confirm permit status. Video inspect pipes through levee.	37.171682 ° -120.655140 °	0.000000 ° 0.000000 °	0037 Y

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US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

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Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
38			Levee Embankments	Sod Cover		U	Surface damage appears to be due to cattle. Depressions up to 8 inches max. : Repair.	37.171630 ° -120.642340 °	37.171680 ° -120.656080 °	0038 Y
39			Levee Embankments	Encroachments		M	Electric fence at landside toe. : Remove or confirm permit status.	37.171680 ° -120.655930 °	37.171800 ° -120.664600 °	0039 Y
40			Levee Embankments	Encroachments		U	Power poles within 15 feet of landside toe. : Remove or confirm permit status.	37.171670 ° -120.655070 °	37.171750 ° -120.664620 °	0040 Y
41			Levee Embankments	Animal Control		U	Large extensive network of burrows on levee. 20 inch max depression, up to 9 foot deep burrows. : Grout and repair.	37.175313 ° -120.664580 °	0.000000 ° 0.000000 °	0041 Y
42			Levee Embankments	Animal Control		U	Burrows up to 7 feet deep and 9 inch in diameter. : Repair holes and control rodents.	37.178113 ° -120.664562 °	0.000000 ° 0.000000 °	0042 Y
43			Levee Embankments	Encroachments		U	Pump station. Possible pipe through levee. : Confirm permit status. Video inspect pipe through levee.	37.180412 ° -120.664533 °	0.000000 ° 0.000000 °	0043 Y
44			Levee Embankments	Encroachments		U	2 utility poles within 15 feet of toe and overhead line crosses levee. : Remove or confirm permit status.	37.180942 ° -120.664495 °	0.000000 ° 0.000000 °	0044 Y
45			Levee Embankments	Unwanted Vegetation Growth		U	Trees within 15 feet of levee toe. : NA	37.184382 ° -120.664542 °	0.000000 ° 0.000000 °	0045 Y
46			Levee Embankments	Encroachments		U	Irrigation canal within 15 feet of levee landside toe. : Remove or confirm permit status.	37.171750 ° -120.664600 °	37.185850 ° -120.664610 °	0046 Y
47			Levee Embankments	Encroachments		M	Fencing and gate across levee. : Remove or confirm permit status.	37.185988 ° -120.664685 °	0.000000 ° 0.000000 °	0047 Y
48			Levee Embankments	Encroachments		U	Irrigation canal within 15 feet of levee toe. : Remove or confirm permit status.	37.185970 ° -120.672760 °	37.185950 ° -120.665260 °	0048 Y
49			Levee Embankments	Encroachments		U	Utility poles and barbed wire fencing within 15 feet of levee toe. : Remove or confirm permit status.	37.186370 ° -120.673530 °	37.186270 ° -120.665560 °	0049 Y
50			Levee Embankments	Erosion/ Bank Caving		M	Erosion on waterside slope 10 inches deep and 20 feet long. May be caused by vehicles. : Repair to as-built lines and grade.	37.186210 ° -120.672424 °	0.000000 ° 0.000000 °	0050 Y
51			Levee Embankments	Sod Cover		M	Surface damage on waterside slope appears to be from cattle. Length 75 feet. : Repair and discontinue use.	37.187945 ° -120.677340 °	0.000000 ° 0.000000 °	0051 Y
52			Levee Embankments	Encroachments		U	Two pipes through levee with concrete gate valve risers. : Confirm permit status.	37.187955 ° -120.677370 °	0.000000 ° 0.000000 °	0052 Y
53			Levee Embankments	Depressions/ Rutting		U	Depression on waterside slope 13 feet long by 8 feet wide and 12 inches deep. : Repair.	37.188520 ° -120.678143 °	0.000000 ° 0.000000 °	0053 Y
54			Levee Embankments	Animal Control		U	Several holes on both sides of levee. Average size 2 inches wide, max 6 inches deep. : Control rodents and repair holes.	37.188522 ° -120.678122 °	0.000000 ° 0.000000 °	0054 Y
55			Flood Damage Reduction Channels	Encroachments		U	Low water crossing (concrete) bridge with raised approach embankments with riprap. Appears to be in good condition. : Confirm permit status.	37.190673 ° -120.678468 °	0.000000 ° 0.000000 °	0055 Y
56			Levee Embankments	Cracking		U	Several cracks over length of 50 + feet. Up to 10 inches deep. May be due to desiccation and shrinkage. : Repair cracking.	37.191630 ° -120.681775 °	0.000000 ° 0.000000 °	0056 Y
57			Levee Embankments	Animal Control		U	Small rodent burrows up to 16 inches deep. Found on both sides of levee. Conditions are typical of reach. : Control rodents and repair holes.	37.195387 ° -120.686132 °	0.000000 ° 0.000000 °	0057 Y

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Continuing Eligibility Inspection (Routine)

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Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
58			Levee Embankments	Unwanted Vegetation Growth		U	Brush and weeds over 1 foot high on landside slope. Prevents full inspection. : Mow tall weeds.	37.189760 ° -120.679780 °	37.196590 ° -120.687770 °	0058 Y
59			Levee Embankments	Depressions/ Rutting		U	Local depression on waterside slope. 10 inches deep by 10 feet by 8 feet. : Fill and compact.	37.199532 ° -120.690950 °	0.000000 ° 0.000000 °	0059 Y
60			Flood Damage Reduction Channels	Encroachments		U	Barbed wire fencing across floodway. : Remove or confirm permit status.	37.200547 ° -120.692508 °	0.000000 ° 0.000000 °	0060 Y
61			Levee Embankments	Encroachments		U	Cattle guard on crown and barbed wire fencing across levee. May be contributing to surface erosion. Concrete structure partially deteriorating. : Remove or confirm permit status. Repair surface damage.	37.200758 ° -120.693158 °	0.000000 ° 0.000000 °	0061 Y
62			Levee Embankments	Sod Cover		U	Depression appears to be caused by cattle or foot traffic and runoff from levee. 12 feet long, 8 inches deep. : Repair.	37.200770 ° -120.693160 °	0.000000 ° 0.000000 °	0062 Y
63			Levee Embankments	Sod Cover		U	Surface damage with depressions up to 12 inches deep. Appears to be from grazing. : Repair and resurface. Discontinue use.	37.186360 ° -120.673460 °	37.200840 ° -120.693470 °	0063 Y
64			Levee Embankments	Encroachments		M	Barbed wire fencing within 15 feet of land side toe. About 300 feet long. : Remove or confirm permit status.	37.200830 ° -120.694140 °	37.200620 ° -120.693200 °	0064 Y
65			Levee Embankments	Encroachments		U	Canal turned into wetland within 15 feet of landside toe. : Fill in to prevent seepage.	37.200845 ° -120.693485 °	0.000000 ° 0.000000 °	0065 Y
66			Levee Embankments	Erosion/ Bank Caving		U	Erosion due to irrigation canal. 14 feet tall, nearly vertical, 13 feet wide on landside slope. Concern that a pipe leak may be causing erosion on the upstream side of the pipe. : Repair.	37.200932 ° -120.694217 °	0.000000 ° 0.000000 °	0066 Y
67			Levee Embankments	Encroachments		U	Headgate within 15 feet of levee toe, with basin. Canal siphon under levee. : Remove or confirm permit status.	37.200957 ° -120.694327 °	0.000000 ° 0.000000 °	0067 Y
68			Levee Embankments	Encroachments		U	Utility pole and guy wire at toe of levee. : Remove or confirm permit status.	37.200977 ° -120.694632 °	0.000000 ° 0.000000 °	0068 Y
69			Flood Damage Reduction Channels	Concrete Surfaces		A	Mariposa bypass inlet control structure with 14 bays (8 gated), wing walls, downstream erosion apron and baffle. Appears to be in good condition. : NA	37.200967 ° -120.694675 °	0.000000 ° 0.000000 °	0069 Y
70			Flood Damage Reduction Channels	Revetments other than Riprap		A	Cobble bank protection on upstream and downstream waterside slope. In good condition. : NA	37.201117 ° -120.694818 °	0.000000 ° 0.000000 °	0070 Y

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06B_2012_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Flume in Eastside Bypass Channel with grouted stone bank protection and 6 inlets. Vegetation impeding flow. Some minor concrete cracking. Old tires and debris on levee slope.

USACE_CESPK_L06B_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.112533 ° -120.588957 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Flume in Eastside Bypass Channel with grouted stone bank protection and 6 inlets. Vegetation impeding flow. Some minor concrete cracking. Old tires and debris on levee slope.

USACE_CESPK_L06B_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.112533 ° -120.588957 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Flume in Eastside Bypass Channel with grouted stone bank protection and 6 inlets. Vegetation impeding flow. Some minor concrete cracking. Old tires and debris on levee slope.

USACE_CESPK_L06B_2012_a_0001_3.jpg

GPS Latitude/Longitude	
Start	End
37.112533 ° -120.588957 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Flume in Eastside Bypass Channel with grouted stone bank protection and 6 inlets. Vegetation impeding flow. Some minor concrete cracking. Old tires and debris on levee slope.

USACE_CESPK_L06B_2012_a_0001_4.jpg

GPS Latitude/Longitude	
Start	End
37.112533 ° -120.588957 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Inlet to Sand Slough. Culvert with gate valve structure on waterside hinge. Opening not visible due to vegetation.

USACE_CESPK_L06B_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.112850 ° -120.588723 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Inlet to Sand Slough. Culvert with gate valve structure on waterside hinge. Opening not visible due to vegetation.

USACE_CESPK_L06B_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.112850 ° -120.588723 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

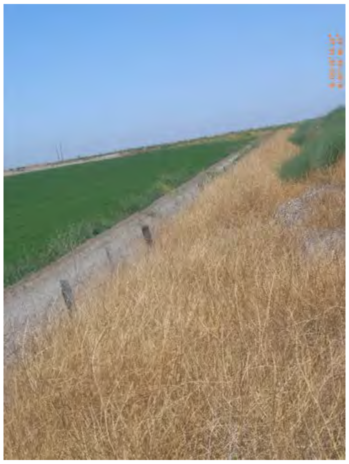
Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fencing on landside slope (barbed wire) also crosses levee at gate.

USACE_CESPK_L06B_2012_a_0003_1.jpg

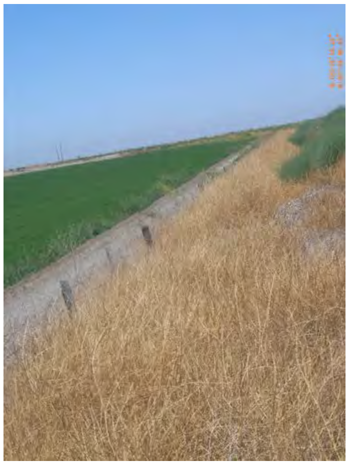


GPS Latitude/Longitude	
Start	End
37.113683 ° -120.588230 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fencing on landside slope. Also crosses levee at entrance gate.

USACE_CESPK_L06B_2012_a_0004_1.jpg

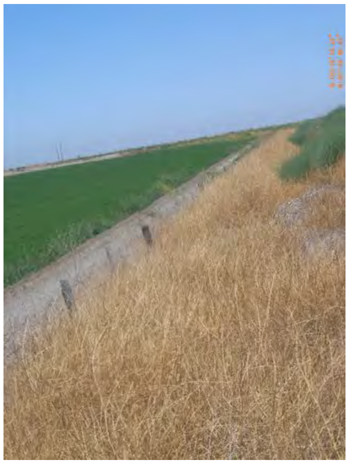


GPS Latitude/Longitude	
Start	End
37.113677 ° -120.588245 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Start point of irrigation canal at toe of landside.

USACE_CESPK_L06B_2012_a_0005_1.jpg



GPS Latitude/Longitude	
Start	End
37.113682 ° -120.588222 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Concrete headwall with CM pipe though levee. Control gate on waterside hinge.

USACE_CESPK_L06B_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.118130 ° -120.586793 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Concrete headwall with CM pipe though levee. Control gate on waterside hinge.

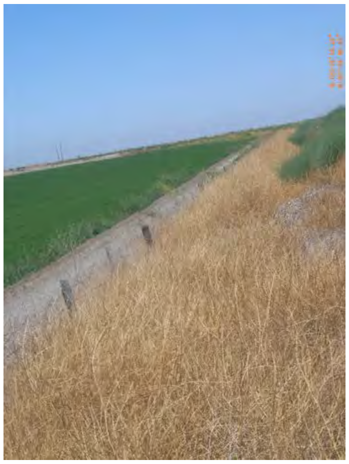
USACE_CESPK_L06B_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.118130 ° -120.586793 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Small irrigation canal at landside toe.

USACE_CESPK_L06B_2012_a_0007_1.jpg



GPS Latitude/Longitude	
Start	End
37.113700 ° -120.588210 °	37.117810 ° -120.586880 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0007
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Small irrigation canal at landside toe.

USACE_CESPK_L06B_2012_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.113700 ° -120.588210 °	37.117810 ° -120.586880 °

Rating[3]: U

LIS Issue Number[1]	0008
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Permitted pipe though levee, with closure gate at landside hinge. Permit #3040.

USACE_CESPK_L06B_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.119278 ° -120.587198 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0009
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several small burrows on both sides of levee.

USACE_CESPK_L06B_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.120462 ° -120.587698 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several small burrows on both sides of levee.

USACE_CESPK_L06B_2012_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
37.120462 ° -120.587698 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Line of poles crossing floodway. Formerly a fence?

USACE_CESPK_L06B_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.126468 ° -120.590240 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fencing across floodway.

USACE_CESPK_L06B_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.127818 ° -120.590812 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Large irrigation canal near landside toe of levee.

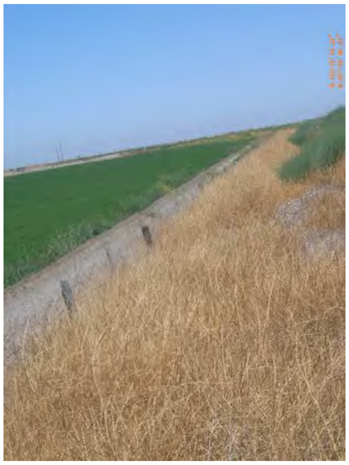
USACE_CESPK_L06B_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.117880 ° -120.586860 °	37.128180 ° -120.590960 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Large irrigation canal near landside toe of levee.

USACE_CESPK_L06B_2012_a_0012_2.jpg



GPS Latitude/Longitude	
Start	End
37.117880 ° -120.586860 °	37.128180 ° -120.590960 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Ponding water at landside toe of levee. Appears to be from overflow of irrigation canal. 80 feet long.

USACE_CESPK_L06B_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.130075 ° -120.591807 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Yellow; Remarks: Erosion on waterside slope up to 16 inches deep and 38 feet long.

USACE_CESPK_L06B_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.141758 ° -120.600292 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Water gauging station with stilling well. Approach bridge and utility pole line crossing appears less than 20 feet above crown.

USACE_CESPK_L06B_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.147300 ° -120.605377 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Yellow; Remarks: Unknown distance of erosion on waterside slope in excess of 100 feet, measured 12 inches deep. Cannot see due to vegetation.

USACE_CESPK_L06B_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.148660 ° -120.606580 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Yellow; Remarks: Unknown distance of erosion on waterside slope in excess of 100 feet, measured 12 inches deep. Cannot see due to vegetation.

USACE_CESPK_L06B_2012_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.148660 ° -120.606580 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Yellow; Remarks: Unknown distance of erosion on waterside slope in excess of 100 feet, measured 12 inches deep. Cannot see due to vegetation.

USACE_CESPK_L06B_2012_a_0017_3.jpg

GPS Latitude/Longitude	
Start	End
37.148660 ° -120.606580 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal siphon under levee with closure structure on waterside hinge. Permit #3040

USACE_CESPK_L06B_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.149688 ° -120.607617 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal siphon under levee with closure structure on waterside hinge. Permit #3040

USACE_CESPK_L06B_2012_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.149688 ° -120.607617 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal siphon under levee with closure structure on waterside hinge. Permit #3040

USACE_CESPK_L06B_2012_a_0018_3.jpg

GPS Latitude/Longitude	
Start	End
37.149688 ° -120.607617 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Guy wire in landside levee slope.

USACE_CESPK_L06B_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.150645 ° -120.608540 °	0.000000 ° 0.000000 °

Rating³: U

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Up to 10 inches deep erosion on waterside slope. 50 feet long.

USACE_CESPK_L06B_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.151695 ° -120.609862 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe though levee. Could not find waterside inlet. Closure structure on landside.

USACE_CESPK_L06B_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.155535 ° -120.615268 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Low water crossing with barbed wire fencing across floodway.

USACE_CESPK_L06B_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.156472 ° -120.616610 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Undocumented pipe though levee. Headwall on landside, inlet not found on waterside.

USACE_CESPK_L06B_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.157065 ° -120.617418 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage from cattle and ATV tracks on landside slope. About 150 feet long.

USACE_CESPK_L06B_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.157133 ° -120.617507 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage from cattle and ATV tracks on landside slope. About 150 feet long.

USACE_CESPK_L06B_2012_a_0024_2.jpg

GPS Latitude/Longitude	
Start	End
37.157133 ° -120.617507 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Line of utility poles within 15 feet of landside levee toe.

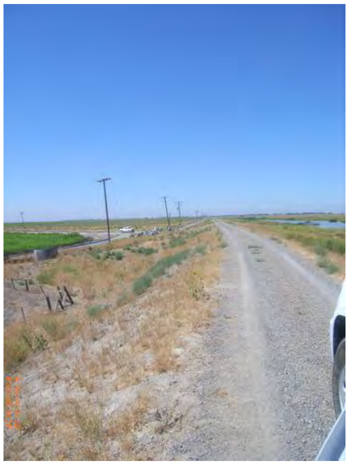
USACE_CESPK_L06B_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.142630 ° -120.601050 °	37.157130 ° -120.617500 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Line of utility poles within 15 feet of landside levee toe.

USACE_CESPK_L06B_2012_a_0025_2.jpg



GPS Latitude/Longitude	
Start	End
37.142630 ° -120.601050 °	37.157130 ° -120.617500 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Erosion and bank caving exacerbated by cattle trail. Up to 24, inches deep, 115 feet long. Due to meander in channel.

USACE_CESPK_L06B_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.162080 ° -120.628250 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Erosion and bank caving exacerbated by cattle trail. Up to 24, inches deep, 115 feet long. Due to meander in channel.

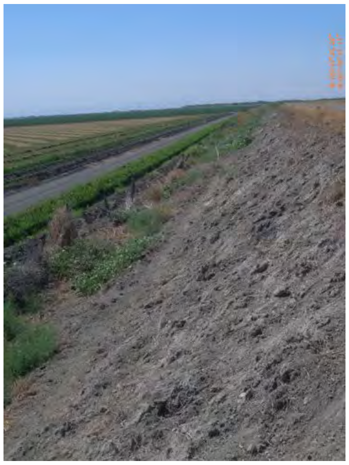
USACE_CESPK_L06B_2012_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
37.162080 ° -120.628250 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation ditch at landside toe.

USACE_CESPK_L06B_2012_a_0027_1.jpg



GPS Latitude/Longitude	
Start	End
37.160340 ° -120.623870 °	37.164070 ° -120.632320 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation ditch at landside toe.

USACE_CESPK_L06B_2012_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
37.160340 ° -120.623870 °	37.164070 ° -120.632320 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

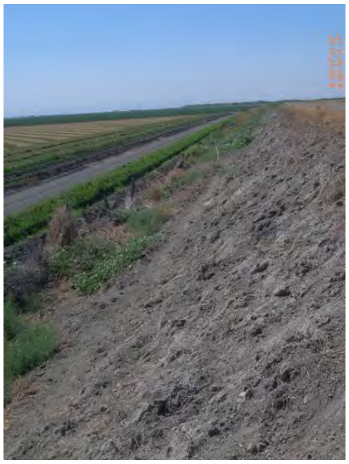
Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage appears to be from cattle.

USACE_CESPK_L06B_2012_a_0028_1.jpg



GPS Latitude/Longitude	
Start	End
37.158620 ° -120.619740 °	37.157490 ° -120.618240 °
Rating³: U	

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage appears to be from cattle.

USACE_CESPK_L06B_2012_a_0028_2.jpg

GPS Latitude/Longitude	
Start	End
37.158620 ° -120.619740 °	37.157490 ° -120.618240 °
Rating³: U	

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Electric fence across levee.

USACE_CESPK_L06B_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.167805 ° -120.636300 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Electric fence across floodway.

USACE_CESPK_L06B_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
37.167887 ° -120.636385 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fence at landside toe.

USACE_CESPK_L06B_2012_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
37.142840 ° -120.601290 °	37.167900 ° -120.636400 °
Rating³: M	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Minor erosion made worse by cattle, less than 12 inches deep. At least 75 feet length.

USACE_CESPK_L06B_2012_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
37.171660 ° -120.650763 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Minor erosion made worse by cattle, less than 12 inches deep. At least 75 feet length.

USACE_CESPK_L06B_2012_a_0032_2.jpg

GPS Latitude/Longitude	
Start	End
37.171660 ° -120.650763 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Electric fence on waterside of crown.

USACE_CESPK_L06B_2012_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
37.167950 ° -120.636450 °	37.171680 ° -120.652140 °
Rating³:	M

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Electric fence across floodway. Undetermined length.

USACE_CESPK_L06B_2012_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
37.171680 ° -120.652128 °	0.000000 ° 0.000000 °
Rating³:	U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Utility line crossing over levee. Pole on berm on waterside, but not in levee prism.

USACE_CESPK_L06B_2012_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
37.171697 ° -120.655040 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Gate valve riser on waterside hinge. Possible pipe through levee.

USACE_CESPK_L06B_2012_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
37.171703 ° -120.654985 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pump station owned by USFWS, with concrete pad and chain link fence.

USACE_CESPK_L06B_2012_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
37.171682 ° -120.655140 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage appears to be due to cattle. Depressions up to 8 inches max.

USACE_CESPK_L06B_2012_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
37.171630 ° -120.642340 °	37.171680 ° -120.656080 °
Rating³: U	

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage appears to be due to cattle. Depressions up to 8 inches max.

USACE_CESPK_L06B_2012_a_0038_2.jpg

GPS Latitude/Longitude	
Start	End
37.171630 ° -120.642340 °	37.171680 ° -120.656080 °
Rating³: U	

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Electric fence at landside toe.

USACE_CESPK_L06B_2012_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
37.171680 ° -120.655930 °	37.171800 ° -120.664600 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0040
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Power poles within 15 feet of landside toe.

USACE_CESPK_L06B_2012_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
37.171670 ° -120.655070 °	37.171750 ° -120.664620 °
Rating[3]: U	

LIS Issue Number[1]	0041
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Large extensive network of burrows on levee. 20 inch max depression, up to 9 foot deep burrows.

USACE_CESPK_L06B_2012_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
37.175313 ° -120.664580 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0041
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Large extensive network of burrows on levee. 20 inch max depression, up to 9 foot deep burrows.

USACE_CESPK_L06B_2012_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
37.175313 ° -120.664580 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Large extensive network of burrows on levee. 20 inch max depression, up to 9 foot deep burrows.

USACE_CESPK_L06B_2012_a_0041_3.jpg

GPS Latitude/Longitude	
Start	End
37.175313 ° -120.664580 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Burrows up to 7 feet deep and 9 inch in diameter.

USACE_CESPK_L06B_2012_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
37.178113 ° -120.664562 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pump station. Possible pipe through levee.

USACE_CESPK_L06B_2012_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
37.180412 ° -120.664533 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: 2 utility poles within 15 feet of toe and overhead line crosses levee.

USACE_CESPK_L06B_2012_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
37.180942 ° -120.664495 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees within 15 feet of levee toe.

USACE_CESPK_L06B_2012_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
37.184382 ° -120.664542 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal within 15 feet of levee landside toe.

USACE_CESPK_L06B_2012_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
37.171750 ° -120.664600 °	37.185850 ° -120.664610 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal within 15 feet of levee landside toe.

USACE_CESPK_L06B_2012_a_0046_2.jpg

GPS Latitude/Longitude	
Start	End
37.171750 ° -120.664600 °	37.185850 ° -120.664610 °
Rating³: U	

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fencing and gate across levee.

USACE_CESPK_L06B_2012_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
37.185988 ° -120.664685 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation canal within 15 feet of levee toe.

USACE_CESPK_L06B_2012_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
37.185970 ° -120.672760 °	37.185950 ° -120.665260 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility poles and barbed wire fencing within 15 feet of levee toe.

USACE_CESPK_L06B_2012_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
37.186370 ° -120.673530 °	37.186270 ° -120.665560 °
Rating³: U	

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Erosion on waterside slope 10 inches deep and 20 feet long. May be caused by vehicles.

USACE_CESPK_L06B_2012_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
37.186210 ° -120.672424 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Minimally Acceptable; Remarks: Surface damage on waterside slope appears to be from cattle. Length 75 feet.

USACE_CESPK_L06B_2012_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
37.187945 ° -120.677340 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0052
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Two pipes through levee with concrete gate valve risers.

USACE_CESPK_L06B_2012_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
37.187955 ° -120.677370 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0053
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Depression on waterside slope 13 feet long by 8 feet wide and 12 inches deep.

USACE_CESPK_L06B_2012_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
37.188520 ° -120.678143 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0054
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several holes on both sides of levee. Average size 2 inches wide, max 6 inches deep.

USACE_CESPK_L06B_2012_a_0054_1.jpg

GPS Latitude/Longitude	
Start	End
37.188522 ° -120.678122 °	0.000000 ° 0.000000 °
Rating[3]: U	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Low water crossing (concrete) bridge with raised approach embankments with riprap. Appears to be in good condition.

USACE_CESPK_L06B_2012_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
37.190673 ° -120.678468 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Cracking

Rated Item: 9. Cracking; Rating: Unacceptable Yellow; Remarks: Several cracks over length of 50 + feet. Up to 10 inches deep. May be due to desiccation and shrinkage.

USACE_CESPK_L06B_2012_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
37.191630 ° -120.681775 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Small rodent burrows up to 16 inches deep. Found on both sides of levee. Conditions are typical of reach.

USACE_CESPK_L06B_2012_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
37.195387 ° -120.686132 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush and weeds over 1 foot high on landside slope. Prevents full inspection.

USACE_CESPK_L06B_2012_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
37.189760 ° -120.679780 °	37.196590 ° -120.687770 °
Rating³: U	

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Local depression on waterside slope. 10 inches deep by 10 feet by 8 feet.

USACE_CESPK_L06B_2012_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
37.199532 ° -120.690950 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0060
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fencing across floodway.

USACE_CESPK_L06B_2012_a_0060_1.jpg

GPS Latitude/Longitude	
Start	End
37.200547 ° -120.692508 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0061
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle guard on crown and barbed wire fencing across levee. May be contributing to surface erosion. Concrete structure partially deteriorating.

USACE_CESPK_L06B_2012_a_0061_1.jpg

GPS Latitude/Longitude	
Start	End
37.200758 ° -120.693158 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0062
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Depression appears to be caused by cattle or foot traffic and runoff from levee. 12 feet long, 8 inches deep.

USACE_CESPK_L06B_2012_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
37.200770 ° -120.693160 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0063
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage with depressions up to 12 inches deep. Appears to be from grazing.

USACE_CESPK_L06B_2012_a_0063_1.jpg

GPS Latitude/Longitude	
Start	End
37.186360 ° -120.673460 °	37.200840 ° -120.693470 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: Surface damage with depressions up to 12 inches deep. Appears to be from grazing.

USACE_CESPK_L06B_2012_a_0063_2.jpg

GPS Latitude/Longitude	
Start	End
37.186360 ° -120.673460 °	37.200840 ° -120.693470 °
Rating³: U	

LIS Issue Number¹	0064
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fencing within 15 feet of land side toe. About 300 feet long.

USACE_CESPK_L06B_2012_a_0064_1.jpg

GPS Latitude/Longitude	
Start	End
37.200830 ° -120.694140 °	37.200620 ° -120.693200 °
Rating³: M	

LIS Issue Number¹	0065
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Canal turned into wetland within 15 feet of landside toe.

USACE_CESPK_L06B_2012_a_0065_1.jpg

GPS Latitude/Longitude	
Start	End
37.200845 ° -120.693485 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Erosion due to irrigation canal. 14 feet tall, nearly vertical, 13 feet wide on landside slope. Concern that a pipe leak may be causing erosion on the upstream side of the pipe.

USACE_CESPK_L06B_2012_a_0066_1.jpg

GPS Latitude/Longitude	
Start	End
37.200932 ° -120.694217 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Erosion due to irrigation canal. 14 feet tall, nearly vertical, 13 feet wide on landside slope. Concern that a pipe leak may be causing erosion on the upstream side of the pipe.

USACE_CESPK_L06B_2012_a_0066_2.jpg

GPS Latitude/Longitude	
Start	End
37.200932 ° -120.694217 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Headgate within 15 feet of levee toe, with basin. Canal siphon under levee.

USACE_CESPK_L06B_2012_a_0067_1.jpg

GPS Latitude/Longitude	
Start	End
37.200957 ° -120.694327 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility pole and guy wire at toe of levee.

USACE_CESPK_L06B_2012_a_0068_1.jpg

GPS Latitude/Longitude	
Start	End
37.200977 ° -120.694632 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Mariposa bypass inlet control structure with 14 bays (8 gated), wing walls, downstream erosion apron and baffle. Appears to be in good condition.

USACE_CESPK_L06B_2012_a_0069_1.jpg

GPS Latitude/Longitude	
Start	End
37.200967 ° -120.694675 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Mariposa bypass inlet control structure with 14 bays (8 gated), wing walls, downstream erosion apron and baffle. Appears to be in good condition.

USACE_CESPK_L06B_2012_a_0069_2.jpg

GPS Latitude/Longitude	
Start	End
37.200967 ° -120.694675 °	0.000000 ° 0.000000 °
Rating³: A	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank above Mariposa Bypass (L06B)	Left	9.67	USACE	8/20/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Flood Damage Reduction Channels
Item	Revetments other than Riprap

Rated Item: 11. Revetments other than Riprap; Rating: Acceptable; Remarks: Cobble bank protection on upstream and downstream waterside slope. In good condition.

USACE_CESPK_L06B_2012_a_0070_1.jpg

GPS Latitude/Longitude	
Start	End
37.201117 ° -120.694818 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Flood Damage Reduction Channels
Item	Revetments other than Riprap

Rated Item: 11. Revetments other than Riprap; Rating: Acceptable; Remarks: Cobble bank protection on upstream and downstream waterside slope. In good condition.

USACE_CESPK_L06B_2012_a_0070_2.jpg

GPS Latitude/Longitude	
Start	End
37.201117 ° -120.694818 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee/LSJLD-Units 1, 4, 6, and 12

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Bob Murakami, Gene Vaughan, Paul Risher, Justin Hake Date of Inspection: 08/20/2012 - 08/21/2012

Inspection Report Prepared By: Kaylee Peterson Date Report Prepared: ____________

Internal Technical Review (for Periodic Inspections) By: ____________ Date of ITR: ____________

Final Approval By: ____________ Date Approved: ____________

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached. Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	**N/A**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**M**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Erosion		M	Depression greater than 3 feet deep in center of channel. Minor erosion on upstream edge may impact headgate if it continues. Appears that it may have been excavated. : NA	37.200930 ° -120.694868 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Water stage gauge with CMP riser and bridge. : Confirm permit status.	37.200903 ° -120.696472 °	0.000000 ° 0.000000 °	0002 Y
3			Flood Damage Reduction Channels	Encroachments		U	Appears to be abandoned supports for pipe crossing of floodway. Large pile of concrete rubble. Chain link fence. Gabbions below ground. Nearby scour evidence. : Remove or repair and confirm permit status.	37.201040 ° -120.696640 °	37.202150 ° -120.696560 °	0003 Y
4			Levee Embankments	Encroachments		U	Headwall on waterside with 48 inch pipe and flapgate. Landside outlet not visible. : Remove or confirm permit status.	37.200933 ° -120.700887 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Unwanted Vegetation Growth		U	Dead tree and stump within 15 feet of landside levee toe. : Remove.	37.200882 ° -120.700947 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Animal Control		U	Burrow 6 inches wide and 18 inches deep within 15 feet of landside toe. Holes on both sides of levee. : Control rodents and repair holes.	37.200892 ° -120.700928 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		U	Pipe through levee. Headwalls on both sides. Flapgate on water side. Appears to be local drain. : Remove or confirm permit status. Provide positive closure at waterside hinge.	37.200903 ° -120.706327 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		U	Cattle guard and barbwire fence crossing levee. : Remove or confirm permit status.	37.200853 ° -120.706540 °	0.000000 ° 0.000000 °	0008 Y
9			Flood Damage Reduction Channels	Encroachments		U	Barbwire fence crossing floodway. : Remove or confirm permit status.	37.200897 ° -120.706510 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Encroachments		M	Barbed wire fence within 15 feet of levee. Gradually moves away from toe going west. : Remove or relocate and confirm permit status.	37.200950 ° -120.694870 °	37.200900 ° -120.708470 °	0010 Y
11			Levee Embankments	Depressions/ Rutting		U	Depressions within 15 feet of landside toe. Max 19 feet x 5 feet x 2 feet deep. May be related to seepage or slope stability through nearby canal bank. : Repair.	37.200805 ° -120.711012 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Encroachments		U	Pipe through levee with headwalls on both sides and flap gate on waterside. : Remove or confirm permit statis. Provide positive closure.	37.200890 ° -120.716230 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Encroachments		M	Barbed wire fence and gate across levee. : Remove or confirm permit status.	37.200883 ° -120.724848 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments		M	Fence within 15 feet of landside toe. : Remove or relocate or confirm permit status.	37.200890 ° -120.715860 °	37.200900 ° -120.725080 °	0015 Y
15			Flood Damage Reduction Channels	Encroachments		U	Fence across floodway. : Remove or confirm permit status.	37.200900 ° -120.725075 °	0.000000 ° 0.000000 °	0016 Y
16			Levee Embankments	Encroachments		U	Pipe though levee with headwalls on both sides and a flapgate on waterside. : Remove or confirm permit status.	37.200940 ° -120.727588 °	0.000000 ° 0.000000 °	0017 Y
17			Levee Embankments	Encroachments		U	Pipe though levee (18-24 inches) headwall on both sides. Waterside outlet may have flapgate but is submerged. : Remove or confirm permit status. Provide positive closure.	37.200920 ° -120.732238 °	0.000000 ° 0.000000 °	0018 Y
18			Levee Embankments	Encroachments		U	Pipe though levee with headwalls on both sides and flap gate on waterside. : Confirm permit status.	37.200908 ° -120.736008 °	0.000000 ° 0.000000 °	0019 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L012_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
19			Levee Embankments	Unwanted Vegetation Growth		U	Weeds greater than one foot tall. Both sides of levee. : Mow vegetation.	37.200930 ° -120.697090 °	37.200970 ° -120.739700 °	0020 Y
20			Levee Embankments	Encroachments		M	Fence and gate across levee. : Remove or confirm permit status.	37.200925 ° -120.743098 °	0.000000 ° 0.000000 °	0021 Y
21			Flood Damage Reduction Channels	Encroachments		U	Barbed wire fence crosses floodway. : Remove or confirm permit status.	37.200917 ° -120.743063 °	0.000000 ° 0.000000 °	0022 Y
22			Levee Embankments	Encroachments		U	Pipe through levee with headwalls at both sides and waterside flapgate. Headwall on water side is only half height (to pipe center). : Confirm permit status. Video inspect pipe through levee.	37.200930 ° -120.747997 °	0.000000 ° 0.000000 °	0023 Y
23			Levee Embankments	Erosion/ Bank Caving		M	Minor erosion on waterside around headwall. : Repair.	37.200950 ° -120.748073 °	0.000000 ° 0.000000 °	0024 Y
24			Levee Embankments	Animal Control		U	Several large burrows 12 inch diameter by 36 inches deep. Greater than 2 cubic feet of displaced material. On both sides of levee and in crown. : Control rodents and repair holes.	37.200930 ° -120.753855 °	0.000000 ° 0.000000 °	0025 Y
25			Flood Damage Reduction Channels	Concrete Surfaces		A	Weir appears to be in good condition. : NA	37.200977 ° -120.755048 °	0.000000 ° 0.000000 °	0026 Y
26			Levee Embankments	Encroachments		M	Barbed wire fencing intermittently within 15 feet of land side levee toe. : Remove or relocate or confirm permit status.	37.200920 ° -120.732240 °	37.200980 ° -120.755050 °	0027 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L012_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Minimally Acceptable; Remarks: Depression greater than 3 feet deep in center of channel. Minor erosion on upstream edge may impact headgate if it continues. Appears that it may have been excavated.

USACE_CESPK_L012_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.694868 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Water stage gauge with CMP riser and bridge.

USACE_CESPK_L012_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.200903 ° -120.696472 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Appears to be abandoned supports for pipe crossing of floodway. Large pile of concrete rubble. Chain link fence. Gabbions below ground. Nearby scour evidence.

USACE_CESPK_L012_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.201040 ° -120.696640 °	37.202150 ° -120.696560 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Appears to be abandoned supports for pipe crossing of floodway. Large pile of concrete rubble. Chain link fence. Gabbions below ground. Nearby scour evidence.

USACE_CESPK_L012_2012_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
37.201040 ° -120.696640 °	37.202150 ° -120.696560 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Headwall on waterside with 48 inch pipe and flapgate. Landside outlet not visible.

USACE_CESPK_L012_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.200933 ° -120.700887 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Dead tree and stump within 15 feet of landside levee toe.

USACE_CESPK_L012_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.200882 ° -120.700947 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Burrow 6 inches wide and 18 inches deep within 15 feet of landside toe. Holes on both sides of levee.

USACE_CESPK_L012_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.200892 ° -120.700928 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Burrow 6 inches wide and 18 inches deep within 15 feet of landside toe. Holes on both sides of levee.

USACE_CESPK_L012_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.200892 ° -120.700928 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0007
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Headwalls on both sides. Flapgate on water side. Appears to be local drain.

USACE_CESPK_L012_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.200903 ° -120.706327 °	0.000000 ° 0.000000 °

Rating[3]: U

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0007
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Headwalls on both sides. Flapgate on water side. Appears to be local drain.

USACE_CESPK_L012_2012_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.200903 ° -120.706327 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0008
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle guard and barbwire fence crossing levee.

USACE_CESPK_L012_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.200853 ° -120.706540 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0009
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbwire fence crossing floodway.

USACE_CESPK_L012_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.200897 ° -120.706510 °	0.000000 ° 0.000000 °
Rating[3]: U	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fence within 15 feet of levee. Gradually moves away from toe going west.

USACE_CESPK_L012_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.200950 ° -120.694870 °	37.200900 ° -120.708470 °
Rating³: M	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Depressions within 15 feet of landside toe. Max 19 feet x 5 feet x 2 feet deep. May be related to seepage or slope stability through nearby canal bank.

USACE_CESPK_L012_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.200805 ° -120.711012 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Depressions within 15 feet of landside toe. Max 19 feet x 5 feet x 2 feet deep. May be related to seepage or slope stability through nearby canal bank.

USACE_CESPK_L012_2012_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.200805 ° -120.711012 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Depressions within 15 feet of landside toe. Max 19 feet x 5 feet x 2 feet deep. May be related to seepage or slope stability through nearby canal bank.

USACE_CESPK_L012_2012_a_0011_3.jpg

GPS Latitude/Longitude	
Start	End
37.200805 ° -120.711012 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with headwalls on both sides and flap gate on waterside.

USACE_CESPK_L012_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.200890 ° -120.716230 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with headwalls on both sides and flap gate on waterside.

USACE_CESPK_L012_2012_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.200890 ° -120.716230 °	0.000000 ° 0.000000 °

Rating³: U

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fence and gate across levee.

USACE_CESPK_L012_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.200883 ° -120.724848 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fence within 15 feet of landside toe.

USACE_CESPK_L012_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.200890 ° -120.715860 °	37.200900 ° -120.725080 °

Rating³: M

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence across floodway.

USACE_CESPK_L012_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.200900 ° -120.725075 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwalls on both sides and a flapgate on waterside.

USACE_CESPK_L012_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.200940 ° -120.727588 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwalls on both sides and a flapgate on waterside.

USACE_CESPK_L012_2012_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.200940 ° -120.727588 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe though levee (18-24 inches) headwall on both sides. Waterside outlet may have flapgate but is submerged.

USACE_CESPK_L012_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.200920 ° -120.732238 °	0.000000 ° 0.000000 °
Rating³: U	

---

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe though levee (18-24 inches) headwall on both sides. Waterside outlet may have flapgate but is submerged.

USACE_CESPK_L012_2012_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.200920 ° -120.732238 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwalls on both sides and flap gate on waterside.

USACE_CESPK_L012_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.200908 ° -120.736008 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe though levee with headwalls on both sides and flap gate on waterside.

USACE_CESPK_L012_2012_a_0019_2.jpg

GPS Latitude/Longitude	
Start	End
37.200908 ° -120.736008 °	0.000000 ° 0.000000 °
Rating³: U	

---

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Weeds greater than one foot tall. Both sides of levee.

USACE_CESPK_L012_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.697090 °	37.200970 ° -120.739700 °
Rating³: U	

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Fence and gate across levee.

USACE_CESPK_L012_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.200925 ° -120.743098 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Barbed wire fence crosses floodway.

USACE_CESPK_L012_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.200917 ° -120.743063 °	0.000000 ° 0.000000 °
Rating³: U	

---

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with headwalls at both sides and waterside flapgate. Headwall on water side is only half height (to pipe center).

USACE_CESPK_L012_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.747997 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee with headwalls at both sides and waterside flapgate. Headwall on water side is only half height (to pipe center).

USACE_CESPK_L012_2012_a_0023_2.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.747997 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Minor erosion on waterside around headwall.

USACE_CESPK_L012_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.200950 ° -120.748073 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number[1]	0025
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several large burrows 12 inch diameter by 36 inches deep. Greater than 2 cubic feet of displaced material. On both sides of levee and in crown.

USACE_CESPK_L012_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.753855 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0025
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several large burrows 12 inch diameter by 36 inches deep. Greater than 2 cubic feet of displaced material. On both sides of levee and in crown.

USACE_CESPK_L012_2012_a_0025_2.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.753855 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0025
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Several large burrows 12 inch diameter by 36 inches deep. Greater than 2 cubic feet of displaced material. On both sides of levee and in crown.

USACE_CESPK_L012_2012_a_0025_3.jpg

GPS Latitude/Longitude	
Start	End
37.200930 ° -120.753855 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 1, 4, 6, and 12 Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 12, Mariposa Bypass south levee (L012)		3.34	USACE	8/21/2012 8/21/2012	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Weir appears to be in good condition.

USACE_CESPK_L012_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.200977 ° -120.755048 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fencing intermittently within 15 feet of land side levee toe.

USACE_CESPK_L012_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.200920 ° -120.732240 °	37.200980 ° -120.755050 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 13 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Dear Mr. Punia:

Between March 29 and 31 of 2011, inspectors Ryan Larson, Bob Murakami, Gene Vaughan, and Jerilynn Hilmar from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD)-Units 1, 5, 7, and 22 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

We inspected the following system and associated segments:

System : LSJLD-Units 1, 5, 7, and 22
Segment 1A: LSJLD- U 1 San Joaquin R right bank below Bear Cr (L01A)
Segment 5A: LSJLD- U 5 north Bear Creek-Deep Slough right bank (L05A)
Segment 7: LSJLD- U 7 Bear Creek right bank (L007)
Segment 22: LSJLD- U 22 north, East Side Canal left bank (L22A)

The system rating is determined based solely on the USACE inspection checklist. However, due to California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The State needs to continue to demonstrate positive progress in achieving the Framework's short term maintenance objectives (Framework, Page 19).

The attached detailed report itemizes the issues that were noted during the inspection and recommended actions. The following color coding system was used for unacceptable rated items.

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made during the inspection, the LSJLD-Units 1, 5, 7, and 22 system is rated Unacceptable and is inactive in the PL 84-99 Rehabilitation and Inspection Program.

The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, settlement, depressions/rutting, and animal control issues (shown in red and orange on the attached report card). An engineering determination, based upon visual inspection, concluded these items were likely to prevent the system from performing as intended during the next flood event. Encroachments and erosion/bank caving should be addressed in accordance with the Framework. The unrepaired section of levee in Unit 1 was considered an encroachment during this inspection because we were told locals cut the levee during a 1973 event to drain the interior of the system. This is a break in the continuous line of protection and should be addressed. Slope stability, settlement, depressions/rutting, and animal control issues should be addressed immediately. The large dip in the crown of Unit 5 was considered a settlement issue because the site of the 1965 levee break has not been fully repaired to the as constructed levee design and grade. Culverts/discharge pipes not associated with a Federally authorized pump station were inspected under the encroachments category.

Vegetation was determined to be unacceptable, but an engineering determination concluded that this issue would not prevent the system from performing during the next flood event (shown in purple on attached report card). Maintenance of the vegetation should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channel portions of the project. Obstructions/debris and unauthorized encroachments within the floodway should be addressed immediately. Any cracking or spalling of control structures within the floodway should be repaired immediately.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson at the time of a re-inspection request for this system. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card).

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the project sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit as well as the conditions in the USACE recommendation, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual. A copy of all USACE recommendation letters, organized by permit number, is available upon request.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside of the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition or meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact USACE to schedule an inspection.

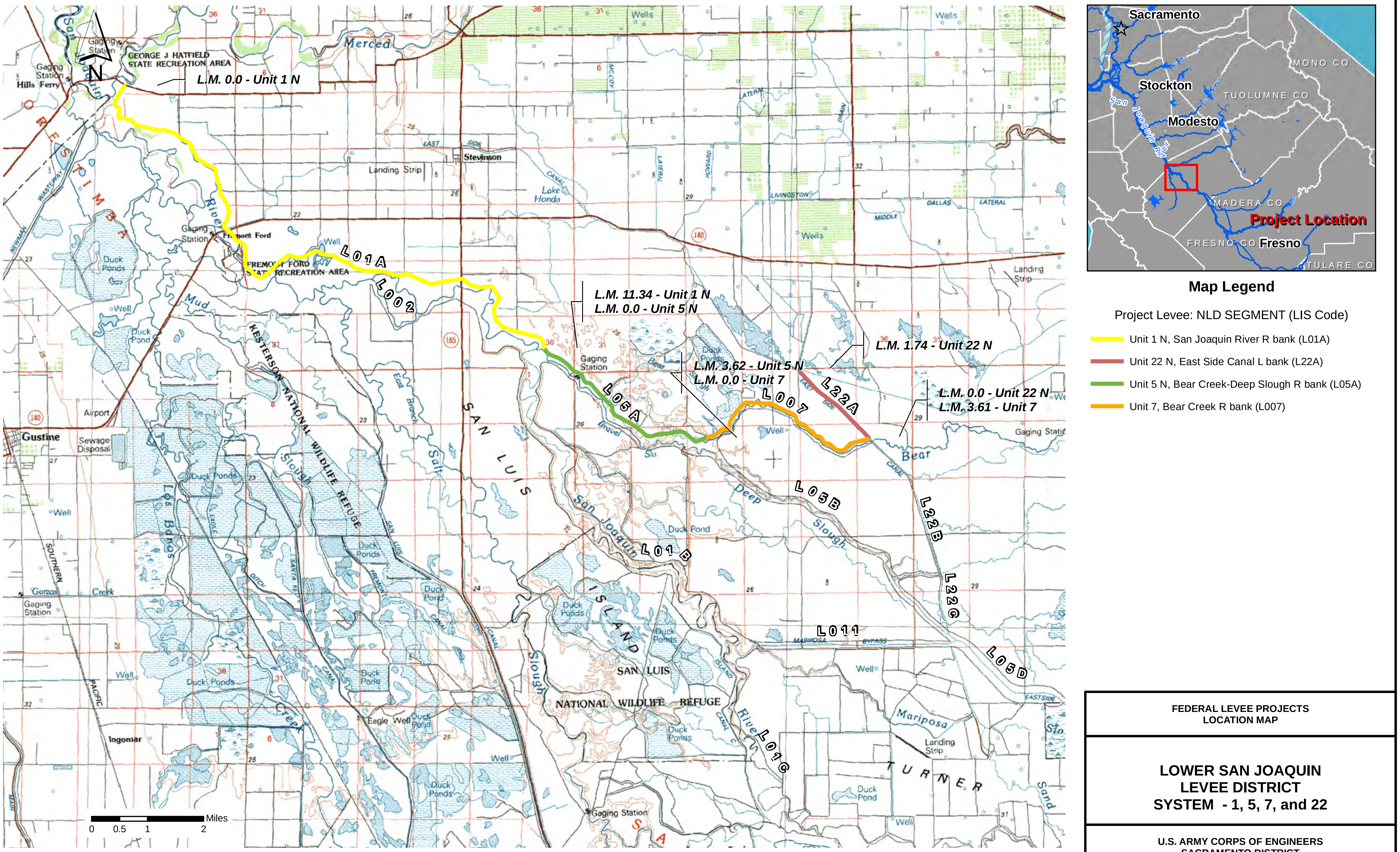
It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, FEMA Region IX and Congressman Dennis Cardoza's office.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Engineer

Enclosures
1) Project Map
2) Report Card
3) Flood Damage Reduction Segment/System Inspection Report



Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- 🟨 Unit 1 N, San Joaquin River R bank (L01A)
- 🟥 Unit 22 N, East Side Canal L bank (L22A)
- 🟩 Unit 5 N, Bear Creek-Deep Slough R bank (L05A)
- 🟧 Unit 7, Bear Creek R bank (L007)

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN LEVEE DISTRICT SYSTEM - 1, 5, 7, and 22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

System
LSJLD-Units 1, 5, 7, and 22
Unacceptable - Inactive

		LSJLD- U 1 San Joaquin R right bnk below Bear Cr (L01A)	LSJLD- U 5 north Bear Creek- Deep Slough right bank (L05A)	LSJLD- U 7 Bear Creek right bank (L007)	LSJLD- U 22 north, East Side Canal left bank (L22A)					
General	Operations and Maintenance Manuals	A	A	A	A					
	Emergency Supplies and Equipment	A	A	A	A					
	Flood Preparedness and Training	A	A	A	A					
Levee Embankments	Unwanted Vegetation Growth	U	A	U	U					
	Sod Cover	NA	NA	NA	NA					
	Encroachments	U	U	U	U					
	Closure Structures	NA	NA	NA	NA					
	Slope Stability	A	U	A	A					
	Erosion/Bank Caving	M	A	A	U					
	Settlement	A	U	A	A					
	Depressions/Rutting	U	A	A	M					
	Cracking	A	A	A	A					
	Animal Control	U	U	U	U					
	Culverts/Discharge Pipes	NA	NA	NA	NA					
	Riprap Revetments & Bank Protection	NA	NA	NA	NA					
	Revetments other than Riprap	NA	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA					
	Seepage	M	M	M	M					
Flood Damage Reduction Channels	Vegetation and Obstructions	U	A	U	U					
	Shoaling	A	A	A	A					
	Encroachments	A	A	U	U					
	Erosion	A	A	A	A					
	Concrete Surfaces	NA	NA	A	M					
	Tilting, Sliding, or Settlement of Concrete	NA	NA	NA	NA					
	Foundation of Concrete Structures	NA	NA	NA	NA					
	Slab and Monolith Joints	NA	NA	NA	NA					
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA					
	Riprap Revetments & Banks	NA	NA	NA	NA					
	Revetments other than Riprap	NA	NA	NA	NA					

Likely Prevents Performance In Next Flood Event/Inactive
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Likely Prevents Performance In Next Flood Event/Active (Framework)
Not Likely to Prevent Performance In Next Flood Event/Active
Not Likely to Prevent Performance In Next Flood Event/Active (Framework)
The worst rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

12/30/2011

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: LSJLD- U 1 San Joaquin R right bnk below Bear Cr

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Inspection Start Date: 3/29/2011

Inspection End Date: 3/31/2011

Inspection Report Prepared By: Bob Murakami

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approved By:

Date Approved:

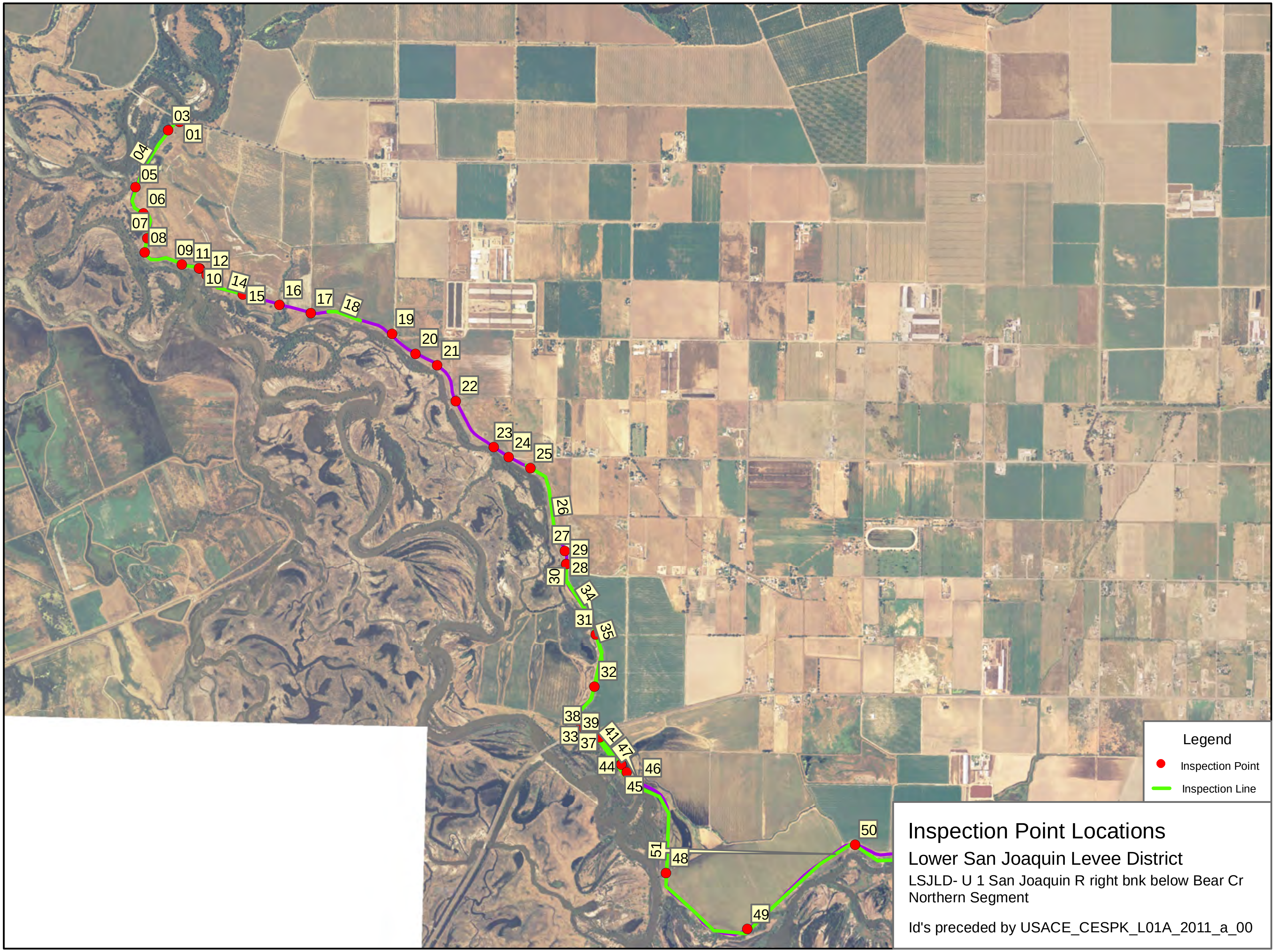
Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☒ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment / System Rating:
- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☒ **Unacceptable**

Contents of Report:
- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☐ **General Items for All Flood Control Works**
- ☒ **Levee Embankment**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☒ **FDR System Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

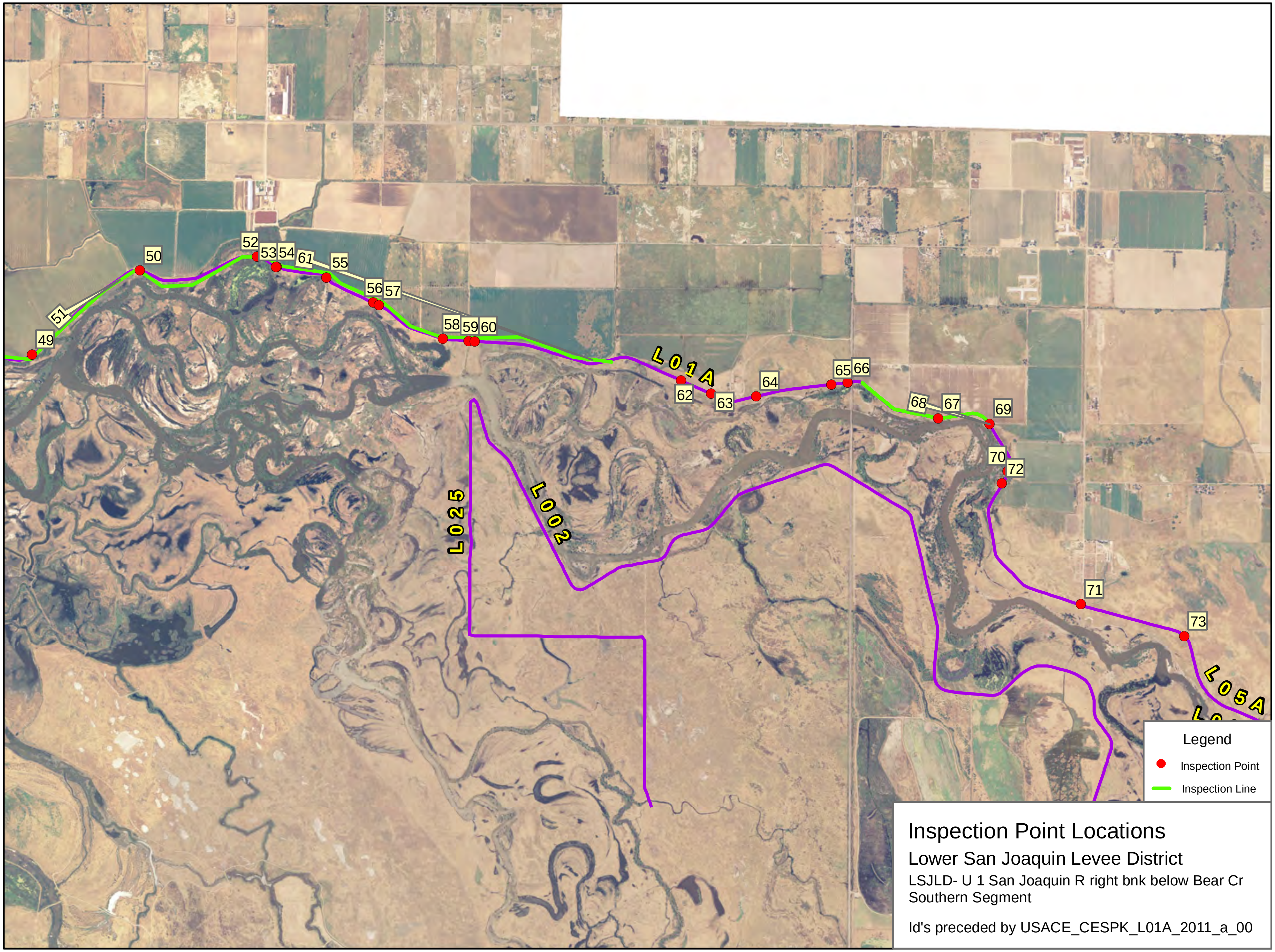


Inspection Point Locations

Lower San Joaquin Levee District

LSJLD- U 1 San Joaquin R right bnk below Bear Cr
Northern Segment

Id's preceded by USACE_CESPK_L01A_2011_a_00



Inspection Point Locations

Lower San Joaquin Levee District

LSJLD- U 1 San Joaquin R right bnk below Bear Cr
Southern Segment

Id's preceded by USACE_CESPK_L01A_2011_a_00

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	L01A_2011_a_0001: Downstream limit of unit 1 slopes and crown look good.: NA (A) L01A_2011_a_0051: Grass longer than 12" on both slopes . Obscures visibility for inspection.: NA (U) L01A_2011_a_0061: Vegetation on LS and WS slopes longer than 12". Obscures visibility for inspection.: NA (U) L01A_2011_a_0068: Grass and weeds on slopes greater than 12" in length obscures visibility for inspection.: NA (U)
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**NA**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	L01A_2011_a_0003: Barbed wire fence at WS toe.: Permit or remove fence from project right of way (U) L01A_2011_a_0004: Levee used for grazing. Hoof prints and holes from cattle grazing.: Restore slopes and damage from Animals. (M) L01A_2011_a_0005: Water ponding within 15 feet of LS toe.: Ensure ponding is not a threat to levee (M) L01A_2011_a_0007: Pipe thru levee for drainage. Flap gate on WS. Under water. Flap gate appears to work well.: Video inspect pipe thru levee (U) L01A_2011_a_0008: Vertical pipe in WS slope, grouted closed.: Determine what the pipe is for. Remove from right of way if not necessary (U) L01A_2011_a_0009: Pipe thru levee. Flap gate on WS. Headwall on LS.: Video inspect pipe thru levee (U) L01A_2011_a_0010: Pipe thru levee for drainage. Flap gate on WS. Headwall on LS.: Video inspect pipe thru levee (U) L01A_2011_a_0014: Levee used for grazing. Damage at
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				cattle trails from hoof prints.: Restore levee (M) L01A_2011_a_0015: Pipe thru levee for drainage. Flap gate on WS Headwall on LS. CMP.: Video inspect pipe (U) L01A_2011_a_0020: Pipe thru levee. For drainage. Concrete vault at LS toe. Water too high to see pipe outlet on WS.: Video inspect pipe thru levee (U) L01A_2011_a_0021: Pipe thru levee for drainage. Looks like inspection ID # 20. Water high on both sides of levee.: Video inspect pipe thru levee (U) L01A_2011_a_0023: Pipe thru levee for drainage. Headwall on LS. WS under water.: Video inspect pipe thru levee (U) L01A_2011_a_0024: Cattle grazing levee. Trails on WS and LS from cattle.: Restore cross section (U) L01A_2011_a_0025: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.: Video inspect pipe thru levee (U) L01A_2011_a_0026: Cattle grazing the Levee. Trails and hoof damage to slopes.: Restore levee cross section (M) L01A_2011_a_0028: Pipe thru levee headwall under water. Cannot see WS outlet of pipe.: Video inspect pipe thru levee (U) L01A_2011_a_0030: Barbed wire fence parallel to levee on WS.: Permit or remove from project right of way (A) L01A_2011_a_0033: Cattle pens on WS. Near WS toe.: Ensure pens are permitted (M) L01A_2011_a_0035: Ditch at LS toe. Water flowing between ditch and levee toe behind spoil bank.: Remove ditch from project right of way (U) L01A_2011_a_0036: Road cuts thru levee. Approx 3+ feet below crown.: Ensure road is permitted and these is a closure plan for road. (U) L01A_2011_a_0037: Power pole at WS toe.: Remove from project right of way or permit (U) L01A_2011_a_0038: Pipe thru levee. No closure device on WS, headwall on LS.: Install positive closure device and Video inspect pipe thru levee (U) L01A_2011_a_0039: Barbed wire fence at LS hinge.: Remove from project right of way. (U) L01A_2011_a_0041: Ditch at LS toe.: Remove from project right of way (U) L01A_2011_a_0042: Pipe thru levee. Pump on LS. WS end is submerged. No WS positive closure device.: Video inspect pipe thru levee (U) L01A_2011_a_0043: 3 power poles in LS slope.: Remove

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Rated Item	Rating	Rating Guidelines	Location/Remarks/Recommendations
			from project right of way (U) L01A_2011_a_0044: Pipe thru levee. Open on both ends. Metal on LS slope. PVC on WS slope. In top 3 feet of levee.: Remove open pipe from levee (U) L01A_2011_a_0046: Headwall on LS of levee. Presumably a pipe thru levee.: Ensure positive closure on Ws of levee and video inspect pipe thru levee (U) L01A_2011_a_0047: Barbed wire fence on LS and WS of levee.: Confirm permit status or Remove from project right of way (U) L01A_2011_a_0048: Pipe thru levee for drainage. WS Submerged. Headwall on LS.: Video inspect pipe thru levee (U) L01A_2011_a_0049: Ditch at LS toe 7 feet away.: Confirm permit status or Remove from project right of way (U) L01A_2011_a_0052: Pipe across crown. Dewatering with tractor. Plastic on WS slope to prevent erosion.: Ensure no erosion on WS slope and provide continuous access along crown (M) L01A_2011_a_0053: Standpipe at LS toe. Erosion at Levee slope.: Repair erosion. (M) L01A_2011_a_0055: Wood structure at LS toe. Water too high to determine if there is a pipe.: NA (M) L01A_2011_a_0056: Crown temporarily blocked by tractor and pipe.: Provide continuous access to crown (M) L01A_2011_a_0057: Pipe thru levee. WS submerged. Closure device on LS@ toe.: Video inspect pipe thru levee (U) L01A_2011_a_0058: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.: Video inspect pipe thru levee (U) L01A_2011_a_0059: Pipe thru levee. Slide gate on WS in gate well. Standpipe on LS.: Video inspect pipe thru levee (U) L01A_2011_a_0060: Barbed wire fence on LS slope.: Confirm permit status. Remove fence from project right of way (U) L01A_2011_a_0063: Concrete headwall on LS at toe. Possible pipe thru levee.: Video inspect pipe thru levee. Ensure WS has positive closure device (U) L01A_2011_a_0064: Concrete headwall on LS. Water obscures both sides. Possible pipe thru levee.: Video inspect pipe thru levee (U) L01A_2011_a_0065: Pipe thru levee. Headwall on LS. WS

Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				submerged.: Video inspect pipe thru levee (U) L01A_2011_a_0066: Pipe thru levee. Positive closure device on WS of levee. Bridge to sluice gate.: Video inspect pipe thru levee (U) L01A_2011_a_0067: Ditch at LS toe.: Remove ditch from project right of way (U) L01A_2011_a_0069: Pipe thru levee. Flap gate on WS.: Video inspect pipe thru levee (U) L01A_2011_a_0070: Levee missing in this area. Material piled on upstream side of cut. Levee degraded to original ground approx 50 feet across cut. No access to other side of cut. Site of levee break in 1973. Cut made by locals to drain interior of leveed area: Restore levee section (U) L01A_2011_a_0071: Pipe thru levee for drainage. Flap gate on WS.: Video inspect pipe thru levee (U) L01A_2011_a_0072: Opposite side of cut in levee.: Restore levee (U) L01A_2011_a_0073: Pipe thru levee for drainage. Flapgate on WS. Headwall on LS.: Video inspect pipe thru levee (U)
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**M**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	L01A_2011_a_0006: Erosion of turnout on LS slope.: Restore turnout. (M) L01A_2011_a_0027: Erosion of WS slope from cattle.: Restore levee cross section (M)
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	L01A_2011_a_0029: Erosion of slopes from cattle.: Restore levee cross section (M) L01A_2011_a_0054: Erosion of LS slope near headwall appears to be outside of prism. Ditch runs parallel to levee.: Repair erosion (M)
7. Settlement[2]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	L01A_2011_a_0011: Rutting on crown, less than 6".: Restore crown (M) L01A_2011_a_0016: Excavations of WS slope and toe. Excavation on WS filling with water. Possible floodfight location. Fill on WS slope. Small peninsula built 20 feet into the water 3 feet wide.: Restore levee cross section (U) L01A_2011_a_0017: Depression at LS toe that is ponding water.: Investigate cause (U) L01A_2011_a_0018: Water ponding along LS slope.: Investigate cause of water' (M) L01A_2011_a_0019: Depression at LS toe greater than 6" deep.: Investigate cause of water. Repair if necessary (U) L01A_2011_a_0022: Water ponding against LS slope.: Grade LS so water does not pond at toe (U) L01A_2011_a_0031: Depression at LS toe. Erosion near edge of pond at levee toe.: Restore levee cross section. Move pond away from levee (U)
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	L01A_2011_a_0012: Small holes in crown. 1" in diameter.: Repair holes (M)

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	L01A_2011_a_0032: Rodent holes on both sides of levee. Holes as deep as 4 feet on both sides. Hole diameters at least 3 inches.: Control woodrush and fill holes (U) L01A_2011_a_0045: Rodent activity on LS slope. 5 holes in 25 foot reach.: Control rodents and fill holes (M) L01A_2011_a_0050: Rodent activity on both slopes.: Control rodents and fill holes (U) L01A_2011_a_0062: Rodent holes on WS slope.: Control rodents and fill holes (M)
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)	**NA**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	

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Levee Embankments

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	NA	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

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[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0001 **Title:** USACE_CESPK_L01A_2011_a_0001_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Downstream limit of unit 1 slopes and crown look good.
	**Inspect ID:** L01A_2011_a_0051 **Title:** USACE_CESPK_L01A_2011_a_0051_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Grass longer than 12" on both slopes . Obscures visibility for inspection.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0061 **Title:** USACE_CESPK_L01A_2011_a_0061_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Vegetation on LS and WS slopes longer than 12". Obscures visibility for inspection.
	**Inspect ID:** L01A_2011_a_0061 **Title:** USACE_CESPK_L01A_2011_a_0061_2.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Vegetation on LS and WS slopes longer than 12". Obscures visibility for inspection.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0068 **Title:** USACE_CESPK_L01A_2011_a_0068_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Grass and weeds on slopes greater than 12" in length obscures visibility for inspection.
	**Inspect ID:** L01A_2011_a_0003 **Title:** USACE_CESPK_L01A_2011_a_0003_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Barbed wire fence at WS toe.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0004 **Title:** USACE_CESPK_L01A_2011_a_0004_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Levee used for grazing. Hoof prints and holes from cattle grazing.
	**Inspect ID:** L01A_2011_a_0004 **Title:** USACE_CESPK_L01A_2011_a_0004_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Levee used for grazing. Hoof prints and holes from cattle grazing.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0005 **Title:** USACE_CESPK_L01A_2011_a_0005_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Water ponding within 15 feet of LS toe.
	**Inspect ID:** L01A_2011_a_0007 **Title:** USACE_CESPK_L01A_2011_a_0007_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Under water. Flap gate appears to work well.

Inspect ID: L01A_2011_a_0007 **Title:** USACE_CESPK_L01A_2011_a_0007_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Under water. Flap gate appears to work well.

Inspect ID: L01A_2011_a_0008 **Title:** USACE_CESPK_L01A_2011_a_0008_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Vertical pipe in WS slope, grouted closed.

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Inspect ID: L01A_2011_a_0009 **Title:** USACE_CESPK_L01A_2011_a_0009_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Headwall on LS.

Inspect ID: L01A_2011_a_0009 **Title:** USACE_CESPK_L01A_2011_a_0009_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Headwall on LS.

Levee Embankments

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	**Inspect ID:** L01A_2011_a_0010 **Title:** USACE_CESPK_L01A_2011_a_0010_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwall on LS.
	**Inspect ID:** L01A_2011_a_0010 **Title:** USACE_CESPK_L01A_2011_a_0010_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwall on LS.

Levee Embankments

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Inspect ID: L01A_2011_a_0014 **Title:** USACE_CESPK_L01A_2011_a_0014_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Levee used for grazing. Damage at cattle trails from hoof prints.

Inspect ID: L01A_2011_a_0015 **Title:** USACE_CESPK_L01A_2011_a_0015_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS Headwall on LS. CMP.

Levee Embankments

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Inspect ID: L01A_2011_a_0015 **Title:** USACE_CESPK_L01A_2011_a_0015_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS Headwall on LS. CMP.

Inspect ID: L01A_2011_a_0020 **Title:** USACE_CESPK_L01A_2011_a_0020_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. For drainage. Concrete vault at LS toe. Water too high to see pipe outlet on WS.

Levee Embankments

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Inspect ID: L01A_2011_a_0021 **Title:** USACE_CESPK_L01A_2011_a_0021_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Looks like inspection ID # 20. Water high on both sides of levee.

Inspect ID: L01A_2011_a_0023 **Title:** USACE_CESPK_L01A_2011_a_0023_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Headwall on LS. WS under water.

Levee Embankments

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Inspect ID: L01A_2011_a_0024 **Title:** USACE_CESPK_L01A_2011_a_0024_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Cattle grazing levee. Trails on WS and LS from cattle.

Inspect ID: L01A_2011_a_0024 **Title:** USACE_CESPK_L01A_2011_a_0024_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Cattle grazing levee. Trails on WS and LS from cattle.

Levee Embankments

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Inspect ID: L01A_2011_a_0025 **Title:** USACE_CESPK_L01A_2011_a_0025_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.

Inspect ID: L01A_2011_a_0025 **Title:** USACE_CESPK_L01A_2011_a_0025_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0026 **Title:** USACE_CESPK_L01A_2011_a_0026_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Cattle grazing the Levee. Trails and hoof damage to slopes.

Inspect ID: L01A_2011_a_0026 **Title:** USACE_CESPK_L01A_2011_a_0026_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Cattle grazing the Levee. Trails and hoof damage to slopes.

	**Inspect ID:** L01A_2011_a_0028 **Title:** USACE_CESPK_L01A_2011_a_0028_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee headwall under water. Cannot see WS outlet of pipe.
	**Inspect ID:** L01A_2011_a_0030 **Title:** USACE_CESPK_L01A_2011_a_0030_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Barbed wire fence parallel to levee on WS.

Inspect ID: L01A_2011_a_0033 **Title:** USACE_CESPK_L01A_2011_a_0033_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Cattle pens on WS. Near WS toe.

Inspect ID: L01A_2011_a_0035 **Title:** USACE_CESPK_L01A_2011_a_0035_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Ditch at LS toe. Water flowing between ditch and levee toe behind spoil bank.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0035 **Title:** USACE_CESPK_L01A_2011_a_0035_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Ditch at LS toe. Water flowing between ditch and levee toe behind spoil bank.

Inspect ID: L01A_2011_a_0036 **Title:** USACE_CESPK_L01A_2011_a_0036_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Road cuts thru levee. Approx 3+ feet below crown.

Inspect ID: L01A_2011_a_0037 **Title:** USACE_CESPK_L01A_2011_a_0037_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Power pole at WS toe.

Inspect ID: L01A_2011_a_0038 **Title:** USACE_CESPK_L01A_2011_a_0038_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. No closure device on WS, headwall on LS.

	**Inspect ID:** L01A_2011_a_0038 **Title:** USACE_CESPK_L01A_2011_a_0038_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. No closure device on WS, headwall on LS.
	**Inspect ID:** L01A_2011_a_0039 **Title:** USACE_CESPK_L01A_2011_a_0039_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Barbed wire fence at LS hinge.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0041 **Title:** USACE_CESPK_L01A_2011_a_0041_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Ditch at LS toe.

Inspect ID: L01A_2011_a_0042 **Title:** USACE_CESPK_L01A_2011_a_0042_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. Pump on LS. WS end is submerged. No WS positive closure device.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0042 **Title:** USACE_CESPK_L01A_2011_a_0042_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Pump on LS. WS end is submerged. No WS positive closure device.
	**Inspect ID:** L01A_2011_a_0043 **Title:** USACE_CESPK_L01A_2011_a_0043_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: 3 power poles in LS slope.

Inspect ID: L01A_2011_a_0044 **Title:** USACE_CESPK_L01A_2011_a_0044_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru level. Open on both ends. Metal on LS slope. PVC on WS slope. In top 3 feet of levee.

Inspect ID: L01A_2011_a_0046 **Title:** USACE_CESPK_L01A_2011_a_0046_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Headwall on LS of levee. Presumably a pipe thru levee.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0047 **Title:** USACE_CESPK_L01A_2011_a_0047_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Barbed wire fence on LS and WS of levee.

Inspect ID: L01A_2011_a_0048 **Title:** USACE_CESPK_L01A_2011_a_0048_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. WS Submerged. Headwall on LS.

	**Inspect ID:** L01A_2011_a_0049 **Title:** USACE_CESPK_L01A_2011_a_0049_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Ditch at LS toe 7 feet away.
	**Inspect ID:** L01A_2011_a_0052 **Title:** USACE_CESPK_L01A_2011_a_0052_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe across crown. Dewatering with tractor. Plastic on WS slope to prevent erosion.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0052 **Title:** USACE_CESPK_L01A_2011_a_0052_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe across crown. Dewatering with tractor. Plastic on WS slope to prevent erosion.

Inspect ID: L01A_2011_a_0053 **Title:** USACE_CESPK_L01A_2011_a_0053_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Standpipe at LS toe. Erosion at Levee slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0053 **Title:** USACE_CESPK_L01A_2011_a_0053_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Standpipe at LS toe. Erosion at Levee slope.
	**Inspect ID:** L01A_2011_a_0055 **Title:** USACE_CESPK_L01A_2011_a_0055_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Wood structure at LS toe. Water too high to determine if there is a pipe.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0056 **Title:** USACE_CESPK_L01A_2011_a_0056_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Crown temporarily blocked by tractor and pipe.

Inspect ID: L01A_2011_a_0057 **Title:** USACE_CESPK_L01A_2011_a_0057_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru level. WS submerged. Closure device on LS@ toe.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0058 **Title:** USACE_CESPK_L01A_2011_a_0058_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.
	**Inspect ID:** L01A_2011_a_0058 **Title:** USACE_CESPK_L01A_2011_a_0058_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.

	**Inspect ID:** L01A_2011_a_0059 **Title:** USACE_CESPK_L01A_2011_a_0059_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Slide gate on WS in gate well. Standpipe on LS.
	**Inspect ID:** L01A_2011_a_0059 **Title:** USACE_CESPK_L01A_2011_a_0059_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Slide gate on WS in gate well. Standpipe on LS.

Inspect ID: L01A_2011_a_0060 **Title:** USACE_CESPK_L01A_2011_a_0060_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Barbed wire fence on LS slope.

Inspect ID: L01A_2011_a_0063 **Title:** USACE_CESPK_L01A_2011_a_0063_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Concrete headwall on LS at toe. Possible pipe thru levee.

	**Inspect ID:** L01A_2011_a_0064 **Title:** USACE_CESPK_L01A_2011_a_0064_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Concrete headwall on LS. Water obscures both sides. Possible pipe thru levee.
	**Inspect ID:** L01A_2011_a_0065 **Title:** USACE_CESPK_L01A_2011_a_0065_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Headwall on LS. WS submerged.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0066 **Title:** USACE_CESPK_L01A_2011_a_0066_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Positive closure device on WS of levee. Bridge to sluice gate.
	**Inspect ID:** L01A_2011_a_0066 **Title:** USACE_CESPK_L01A_2011_a_0066_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Positive closure device on WS of levee. Bridge to sluice gate.

Inspect ID: L01A_2011_a_0067 **Title:** USACE_CESPK_L01A_2011_a_0067_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Ditch at LS toe.

Inspect ID: L01A_2011_a_0069 **Title:** USACE_CESPK_L01A_2011_a_0069_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0069 **Title:** USACE_CESPK_L01A_2011_a_0069_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS.
	**Inspect ID:** L01A_2011_a_0070 **Title:** USACE_CESPK_L01A_2011_a_0070_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Levee missing in this area. Material piled on upstream side of cut. Levee degraded to original ground approx 50 feet across cut. No access to other side of cut. Site of levee break in 1973. Cut made by locals to drain interior of leveed area

	**Inspect ID:** L01A_2011_a_0070 **Title:** USACE_CESPK_L01A_2011_a_0070_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Levee missing in this area. Material piled on upstream side of cut. Levee degraded to original ground approx 50 feet across cut. No access to other side of cut. Site of levee break in 1973. Cut made by locals to drain interior of leveed area
	**Inspect ID:** L01A_2011_a_0071 **Title:** USACE_CESPK_L01A_2011_a_0071_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0071 **Title:** USACE_CESPK_L01A_2011_a_0071_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS.
	**Inspect ID:** L01A_2011_a_0072 **Title:** USACE_CESPK_L01A_2011_a_0072_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Opposite side of cut in levee.

	**Inspect ID:** L01A_2011_a_0073 **Title:** USACE_CESPK_L01A_2011_a_0073_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flapgate on WS. Headwall on LS.
	**Inspect ID:** L01A_2011_a_0073 **Title:** USACE_CESPK_L01A_2011_a_0073_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flapgate on WS. Headwall on LS.

	**Inspect ID:** L01A_2011_a_0006 **Title:** USACE_CESPK_L01A_2011_a_0006_1.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of turnout on LS slope.
	**Inspect ID:** L01A_2011_a_0027 **Title:** USACE_CESPK_L01A_2011_a_0027_1.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope from cattle.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0029 **Title:** USACE_CESPK_L01A_2011_a_0029_1.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of slopes from cattle.

Inspect ID: L01A_2011_a_0054 **Title:** USACE_CESPK_L01A_2011_a_0054_1.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of LS slope near headwall appears to be outside of prism. Ditch runs parallel to levee.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0011 **Title:** USACE_CESPK_L01A_2011_a_0011_1.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Rutting on crown, less than 6".

Inspect ID: L01A_2011_a_0016 **Title:** USACE_CESPK_L01A_2011_a_0016_1.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Excavations of WS slope and toe. Excavation on WS filling with water. Possible floodfight location. Fill on WS slope. Small peninsula built 20 feet into the water 3 feet wide.

Inspect ID: L01A_2011_a_0016 **Title:** USACE_CESPK_L01A_2011_a_0016_2.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Excavations of WS slope and toe. Excavation on WS filling with water. Possible floodlight location. Fill on WS slope. Small peninsula built 20 feet into the water 3 feet wide.

Inspect ID: L01A_2011_a_0017 **Title:** USACE_CESPK_L01A_2011_a_0017_1.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Depression at LS toe that is ponding water.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0018 **Title:** USACE_CESPK_L01A_2011_a_0018_1.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Water ponding along LS slope.

Inspect ID: L01A_2011_a_0018 **Title:** USACE_CESPK_L01A_2011_a_0018_2.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Water ponding along LS slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L01A_2011_a_0019 **Title:** USACE_CESPK_L01A_2011_a_0019_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Remarks: Depression at LS toe greater than 6" deep.
	**Inspect ID:** L01A_2011_a_0022 **Title:** USACE_CESPK_L01A_2011_a_0022_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Remarks: Water ponding against LS slope.

Inspect ID: L01A_2011_a_0031 **Title:** USACE_CESPK_L01A_2011_a_0031_1.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Depression at LS toe. Erosion near edge of pond at levee toe.

Inspect ID: L01A_2011_a_0031 **Title:** USACE_CESPK_L01A_2011_a_0031_2.jpg
Rated Item: 8. Depressions/ Rutting **Caption:** Remarks: Depression at LS toe. Erosion near edge of pond at levee toe.

	**Inspect ID:** L01A_2011_a_0012 **Title:** USACE_CESPK_L01A_2011_a_0012_1.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Small holes in crown. 1" in diameter.
	**Inspect ID:** L01A_2011_a_0032 **Title:** USACE_CESPK_L01A_2011_a_0032_1.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent holes on both sides of levee. Holes as deep as 4 feet on both sides. Hole diameters at least 3 inches.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L01A_2011_a_0032 **Title:** USACE_CESPK_L01A_2011_a_0032_2.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent holes on both sides of levee. Holes as deep as 4 feet on both sides. Hole diameters at least 3 inches.

Inspect ID: L01A_2011_a_0045 **Title:** USACE_CESPK_L01A_2011_a_0045_1.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent activity on LS slope. 5 holes in 25 foot reach.

Inspect ID: L01A_2011_a_0050 **Title:** USACE_CESPK_L01A_2011_a_0050_1.jpg
Rated Item: 10. Animal Control **Caption:** Remarks: Rodent activity on both slopes.

Inspect ID: L01A_2011_a_0062 **Title:** USACE_CESPK_L01A_2011_a_0062_1.jpg
Rated Item: 10. Animal Control **Caption:** Remarks: Rodent holes on WS slope.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**U**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	L01A_2011_a_0034: Station_1 NA: Station_2 NA: Long grass obscures slopes longer than 12".: Mow grass. (U)
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**A**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	**NA**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[2]	**NA**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[3]	**NA**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	
8. Slab and Monolith Joints	**NA**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves[4]	**NA**	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

[4] Proper operation of this item must be demonstrated during the inspection.

Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 1 San Joaquin R rt bnk below Bear Creek

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat1	Long1	Lat2	Long2
USACE_CESPK_L01A_2011_a_0003	Barbed wire fence at WS toe.	37.3481	-120.9597	0	0
USACE_CESPK_L01A_2011_a_0007	Pipe thru levee for drainage. Flap gate on WS. Under water. Flap gate appears to work well.	37.3415	-120.9613	0	0
USACE_CESPK_L01A_2011_a_0008	Vertical pipe in WS slope, grouted closed.	37.3406	-120.9615	0	0
USACE_CESPK_L01A_2011_a_0009	Pipe thru levee. Flap gate on WS. Headwall on LS.	37.3398	-120.9586	0	0
USACE_CESPK_L01A_2011_a_0010	Pipe thru levee for drainage. Flap gate on WS. Headwall on LS.	37.3396	-120.9572	0	0
USACE_CESPK_L01A_2011_a_0015	Pipe thru levee for drainage. Flap gate on WS Headwall on LS. CMP.	37.3380	-120.9539	0	0
USACE_CESPK_L01A_2011_a_0016	Excavations of WS slope and toe. Excavation on WS filling with water. Possible floodfight location. Fill on WS slope. Small peninsula built 20 feet into the water 3 feet wide.	37.3374	-120.9510	0	0
USACE_CESPK_L01A_2011_a_0017	Depression at LS toe that is ponding water.	37.3369	-120.9486	0	0
USACE_CESPK_L01A_2011_a_0019	Depression at LS toe greater than 6" deep.	37.3356	-120.9423	0	0
USACE_CESPK_L01A_2011_a_0020	Pipe thru levee. For drainage. Concrete. Vault at LS toe. Water too high to see pipe outlet on WS.	37.3344	-120.9405	0	0
USACE_CESPK_L01A_2011_a_0021	Pipe thru levee for drainage. Looks like inspection ID # 20. Water high on both sides of levee.	37.3337	-120.9388	0	0
USACE_CESPK_L01A_2011_a_0022	Water ponding against LS slope.	37.3315	-120.9374	0	0
USACE_CESPK_L01A_2011_a_0023	Pipe thru levee for drainage. Headwall on LS. WS under water.	37.3286	-120.9344	0	0
USACE_CESPK_L01A_2011_a_0024	Cattle grazing levee. Trails on WS and LS from cattle.	37.3280	-120.9333	0	0
USACE_CESPK_L01A_2011_a_0025	Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.	37.3273	-120.9316	0	0
USACE_CESPK_L01A_2011_a_0028	Pipe thru levee headwall under water. Cannot see WS outlet of pipe.	37.3214	-120.9288	0	0
USACE_CESPK_L01A_2011_a_0031	Depression at LS toe. Erosion near edge of pond at levee toe.	37.3171	-120.9265	0	0
USACE_CESPK_L01A_2011_a_0032	Rodent holes on both sides of levee. Holes as deep as 4 feet on both sides. Hole diameters at least 3 inches.	37.3139	-120.9265	0	0
USACE_CESPK_L01A_2011_a_0034	Long grass obscures slopes longer than 12".	37.3211	-120.9288	37.31115	-120.92698
USACE_CESPK_L01A_2011_a_0035	Ditch at LS toe. Water ponding between ditch and levee toe behind spoil bank.	37.3210	-120.9288	37.31113	-120.92694
USACE_CESPK_L01A_2011_a_0036	Road cuts thru levee. Approx 3+ feet below crown.	37.3111	-120.9267	0	0
USACE_CESPK_L01A_2011_a_0037	Power pole at WS toe.	37.3113	-120.9273	0	0
USACE_CESPK_L01A_2011_a_0038	Pipe thru levee. No closure device on WS, headwall on LS.	37.3112	-120.9271	0	0

Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 1 San Joaquin R rt bnk below Bear Creek

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat1	Long1	Lat2	Long2
USACE_CESPK_L01A_2011_a_0039	Barbed wire fence at LS hinge.	37.3107	-120.9261	0	0
USACE_CESPK_L01A_2011_a_0041	Ditch at LS toe.	37.3100	-120.9253	37.31098	-120.92635
USACE_CESPK_L01A_2011_a_0042	Pipe thru levee. Pump on LS. WS end is submerged. No WS positive closure device.	37.3091	-120.9245	0	0
USACE_CESPK_L01A_2011_a_0043	3 power poles in LS slope.	37.3097	-120.9249	37.3091	-120.92442
USACE_CESPK_L01A_2011_a_0044	Pipe thru levee. Open on both ends. Metal on LS slope. PVC on WS slope. In top 3 feet of levee.	37.3091	-120.9244	0	0
USACE_CESPK_L01A_2011_a_0046	Headwall on LS of levee. Presumably a pipe thru levee.	37.3079	-120.9231	0	0
USACE_CESPK_L01A_2011_a_0047	Barbed wire fence on LS and WS of levee.	37.3108	-120.9262	37.30783	-120.92289
USACE_CESPK_L01A_2011_a_0048	Pipe thru levee for drainage. WS Submerged. Headwall on LS.	37.3024	-120.9209	0	0
USACE_CESPK_L01A_2011_a_0049	Ditch at LS toe 7 feet away.	37.2989	-120.9146	0	0
USACE_CESPK_L01A_2011_a_0050	Rodent activity on both slopes.	37.3042	-120.9064	0	0
USACE_CESPK_L01A_2011_a_0051	Grass longer than 12" on both slopes . Obscures visibility for inspection.	37.3109	-120.9265	37.30419	-120.90669
USACE_CESPK_L01A_2011_a_0057	Pipe thru levee. WS submerged. Closure device on LS@ toe.	37.3021	-120.8878	0	0
USACE_CESPK_L01A_2011_a_0058	Pipe thru levee for drainage. Headwall on LS. Flap gate on WS.	37.3001	-120.8829	0	0
USACE_CESPK_L01A_2011_a_0059	Pipe thru levee. Slide gate on WS in gate well. Standpipe on LS.	37.2999	-120.8809	0	0
USACE_CESPK_L01A_2011_a_0060	Barbed wire fence on LS slope.	37.2999	-120.8804	0	0
USACE_CESPK_L01A_2011_a_0061	Vegetation on LS and WS slopes longer than 12". Obscures visibility for inspection.	37.3042	-120.9064	37.29865	-120.86983
USACE_CESPK_L01A_2011_a_0063	Concrete headwall on LS at toe. Possible pipe thru levee.	37.2967	-120.8621	0	0
USACE_CESPK_L01A_2011_a_0064	Concrete headwall on LS. Water obscures both sides. Possible pipe thru levee.	37.2966	-120.8586	0	0
USACE_CESPK_L01A_2011_a_0065	Pipe thru levee. Headwall on LS. WS submerged.	37.2973	-120.8528	0	0
USACE_CESPK_L01A_2011_a_0066	Pipe thru levee. Positive closure device on WS of levee. Bridge to sluice gate.	37.2974	-120.8516	0	0
USACE_CESPK_L01A_2011_a_0067	Ditch at LS toe.	37.2952	-120.8446	0	0
USACE_CESPK_L01A_2011_a_0068	Grass and weeds on slopes greater than 12" in length obscures visibility for inspection.	37.2974	-120.8505	37.29489	-120.84058
USACE_CESPK_L01A_2011_a_0069	Pipe thru levee. Flap gate on WS.	37.2949	-120.8406	0	0

Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 1 San Joaquin R rt bnk below Bear Creek

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat1	Long1	Lat2	Long2
USACE_CESPK_L01A_2011_a_0070	Levee missing in this area. Material piled on upstream side of cut. Levee degraded to original ground approx 50 feet across cut. No access to other side of cut. Site of levee break in 1973. Cut made by locals to drain interior of leveed area.	37.2920	-120.8392	0	0
USACE_CESPK_L01A_2011_a_0071	Pipe thru levee for drainage. Flap gate on WS.	37.2838	-120.8335	0	0
USACE_CESPK_L01A_2011_a_0072	Opposite side of cut in levee.	37.2912	-120.8396	0	0
USACE_CESPK_L01A_2011_a_0073	Pipe thru levee for drainage. Flapgate on WS. Headwall on LS.	37.2818	-120.8255	0	0

US Army Corps
of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: LSJLD- U 5 north Bear Creek-Deep Slough right bank

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Inspection Start Date: 3/29/2011

Inspection End Date: 3/31/2011

Inspection Report Prepared By: Bob Murakami

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approved By:

Date Approved:

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☒ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment / System Rating:

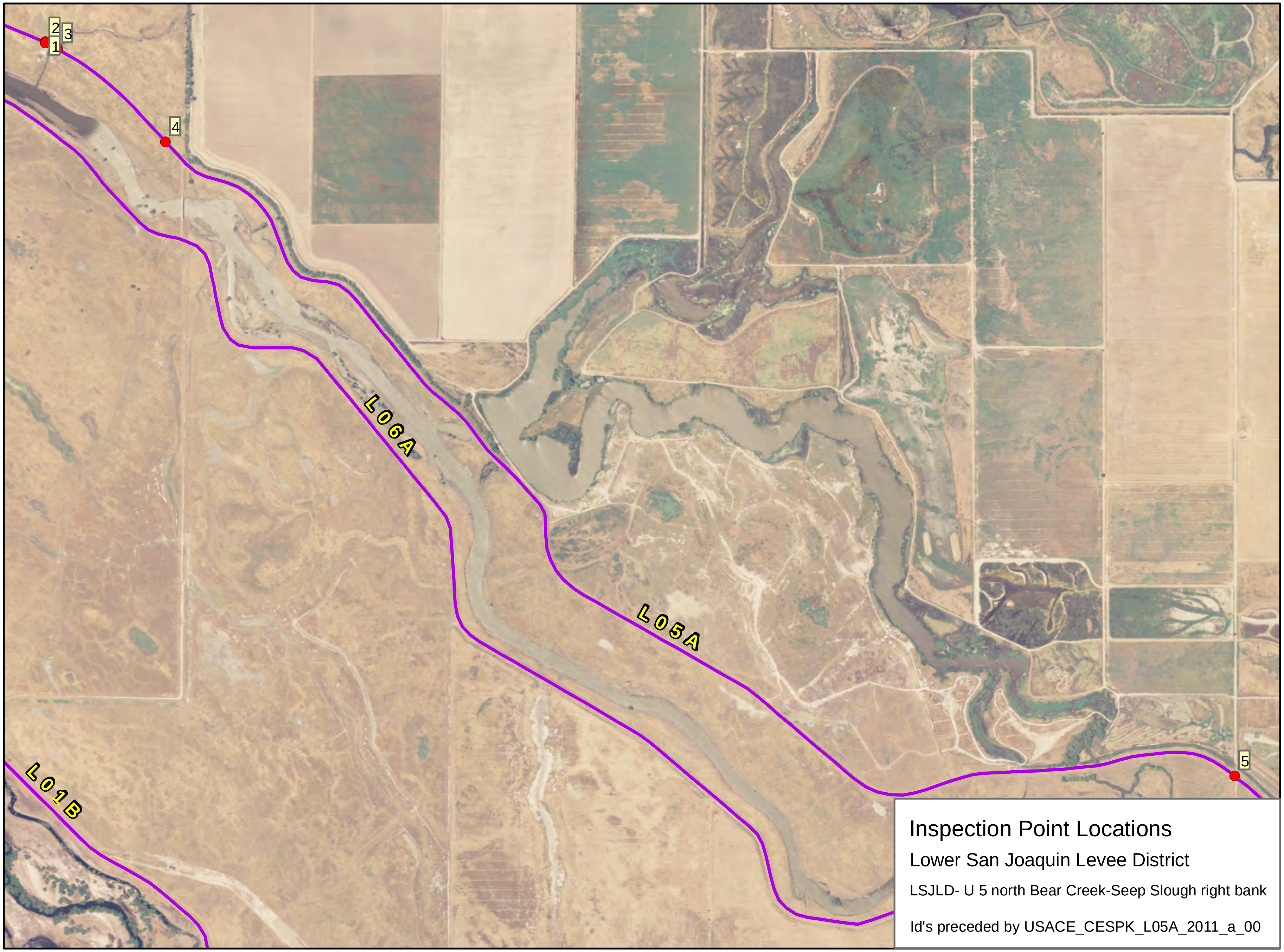
- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☒ **Unacceptable**

Contents of Report:

- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☐ **General Items for All Flood Control Works**
- ☒ **Levee Embankment**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☒ **FDR System Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.



Inspection Point Locations

Lower San Joaquin Levee District

LSJLD- U 5 north Bear Creek-Seep Slough right bank

Id's preceded by USACE_CESPK_L05A_2011_a_00

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]	**A**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**NA**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	L05A_2011_a_0002: Pipe thru levee. Open on WS. Water moving from LS to WS. Site of 1965 levee break. Levee has not been restored . Road over conduit allows continuous access for patrolling. Conduit used to drain protected area.: Video inspect pipe thru levee (U) L05A_2011_a_0004: Pipe thru levee. Flap gate on WS. Headwalls on WS and LS slopes.: Video inspect pipe thru levee (U) L05A_2011_a_0005: Utility pole in LS slope.: Remove pole from project right of way (U)
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Closures) (A or U only)		**U**	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	**U**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	L05A_2011_a_0001: Active slope failure. Arc shaped cracking and portions have sloughed.: Restore LS slope (U)
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[2]	**U**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	L05A_2011_a_0003: Crown approx 4 feet low in this reach.: Restore levee to design lines and grade (U)
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	Physical evidence in other segments of this system that the rodent control program is not effective.
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)	**NA**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments &	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Bank Protection		**M**	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**NA**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Inspect ID: L05A_2011_a_0002 **Title:** USACE_CESPK_L05A_2011_a_0002_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. Open on WS Water moving from LS to WS. Site of 1965 levee break. Levee has not been restored . Road over conduit allows continuous access for patrolling. Conduit used to drain protected area

Inspect ID: L05A_2011_a_0004 **Title:** USACE_CESPK_L05A_2011_a_0004_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Headwalls on WS and LS slopes.

Inspect ID: L05A_2011_a_0004 **Title:** USACE_CESPK_L05A_2011_a_0004_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Headwalls on WS and LS slopes.

Inspect ID: L05A_2011_a_0005 **Title:** USACE_CESPK_L05A_2011_a_0005_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Utility pole in LS slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L05A_2011_a_0001 **Title:** USACE_CESPK_L05A_2011_a_0001_1.jpg **Rated Item:** 5. Slope Stability **Caption:** Remarks: Active slope failure. Arc shaped cracking and portions have sloughed.

Inspect ID: L05A_2011_a_0003 **Title:** USACE_CESPK_L05A_2011_a_0003_1.jpg **Rated Item:** 7. Settlement **Caption:** Remarks: Crown approx 4 feet low in this reach.

Inspect ID: L05A_2011_a_0003 **Title:** USACE_CESPK_L05A_2011_a_0003_2.jpg **Rated Item:** 7. Settlement **Caption:** Remarks: Crown approx 4 feet low in this reach. Water drains from LS to WS through this location. Site of 1965 levee break.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**A**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	**NA**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[2]	**NA**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[3]	**NA**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	
8. Slab and Monolith Joints	**NA**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	

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Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves[4]	**NA**	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

[4] Proper operation of this item must be demonstrated during the inspection.

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Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 5 north Bear Creek-Deep Slough right bank

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat	Long
USACE_CESPK_L05A_2011_a_0001	Active slope failure. Arc shaped cracking and portions have sloughed.	37.2768	-120.8200
USACE_CESPK_L05A_2011_a_0002	Pipe thru levee. Open on WS. Water moving from LS to WS. Site of 1965 levee break. Levee has not been restored . Road over conduit allows continuous access for patrolling. Conduit used to drain protected area.	37.2767	-120.8200
USACE_CESPK_L05A_2011_a_0003	Crown approx 4 feet low in this reach.	37.2766	-120.8196
USACE_CESPK_L05A_2011_a_0004	Pipe thru levee. Flap gate on WS. Headwalls on WS and LS slopes.	37.2740	-120.8158
USACE_CESPK_L05A_2011_a_0005	Utility pole in LS slope.	37.2567	-120.7789

US Army Corps of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: LSJLD- U 7 Bear Creek right bank
Public Sponsor(s): Central Valley Flood Protection Board
Public Sponsor Representative: Richard Willoughby
Sponsor Phone: (916) 574-1206
Sponsor Email: richard@water.ca.gov
Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan
Inspection Start Date: 3/30/2011
Inspection End Date: 3/30/2011
Inspection Report Prepared By: Bob Murakami
Date Report Prepared:
Internal Technical Review (for Periodic Inspections) By:
Date of ITR:
Final Approved By:
Date Approved:

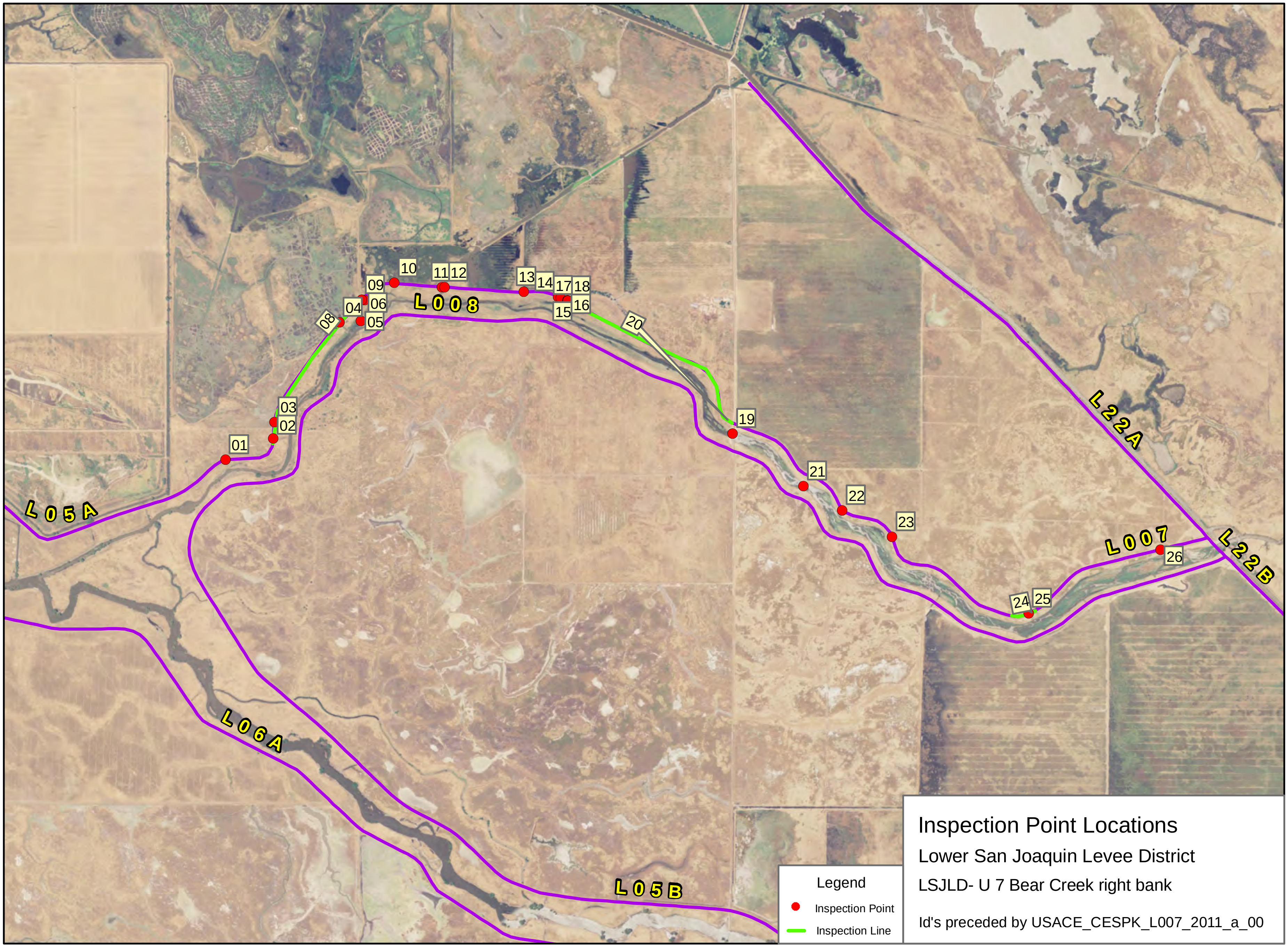
Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☒ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment / System Rating:
- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☒ **Unacceptable**

Contents of Report:
- ☒ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☒ **General Items for All Flood Control Works**
- ☒ **Levee Embankment**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☒ **FDR System Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.



Inspection Point Locations

Lower San Joaquin Levee District

LSJLD- U 7 Bear Creek right bank

Id's preceded by USACE_CESPK_L007_2011_a_00

General Items for All Flood Damage Reduction Segments / Systems

For use during all inspections of all Flood Damage Reduction Segments / Systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	L007_2011_a_0008: Vegetation nicely maintained.: NA (A) L007_2011_a_0024: Vegetation on LS slope longer than 12" obscures visibility for inspection.: NA (U)
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**NA**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	L007_2011_a_0001: Pipe thru levee. Flap gate on WS. Top of flap gate visible through water Headwall visible on LS.: Video inspect pipe thru levee (U) L007_2011_a_0002: Pipe thru levee. Sluice gate and gate well on WS slope. 6 pilings over pipe. Sluice gate closed.: Video inspect pipe thru levee (U) L007_2011_a_0003: Pipe thru levee for drainage Flap gate on WS. headwalls on WS and LS.: Video inspect pipe thru levee (U) L007_2011_a_0004: Pipe thru levee for drainage. Flap gate on WS. Standpipe on LS. Headwall on WS.: Video inspect pipe thru levee (U) L007_2011_a_0006: Pipe thru levee Flap gate on WS. Headwalls on WS and LS.: Video inspect pipe thru levee (U) L007_2011_a_0010: Cattle on LS slope have caused holes. Water pondng in holes. Cattle trails on LS slope. LS slope is steeper than 2:1 in this area.: Restore levee slope and toe (M) L007_2011_a_0011: Pipe thru levee for drainage. Flap gate
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	

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Levee Embankments
For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
				on WS. Headwalls on WS and LS.: Video inspect pipe thru levee (U) L007_2011_a_0012: Cattle trail on LS slope 1 foot deep.: Restore slope (M) L007_2011_a_0013: LS slope steeper than 2:1 for approx 40 feet. Appears to be caused by cattle.: Restore slope. (U) L007_2011_a_0016: Pipe thru levee for drainage. Flap gate on WS. Headwall on WS.: Video inspect pipe thru levee (U) L007_2011_a_0017: Cattle trails on LS slope causing erosion.: Restore slopes (U) L007_2011_a_0020: Cattle trails on LS slope. Water ponding in holes on slope.: Restore slopes (M) L007_2011_a_0022: Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.: Video inspect pipe thru levee (U) L007_2011_a_0023: Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.: Video inspect pipe thru levee (U) L007_2011_a_0025: Pipe thru levee. For drainage. Headwalls on LS and WS. Flap gate on WS.: Video inspect pipe thru levee (U) L007_2011_a_0026: Gaging station on WS slope.: NA (M)
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[2]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	L007_2011_a_0009: Small rodent holes at LS hinge.: Restore slope and crown and control rodents (M) L007_2011_a_0014: Rodent holes on both sides of the levee. Holes in crown connect.: Control rodents aid fill holes (U) L007_2011_a_0015: Rodent holes on both slopes. 6 inch dia holes.: Control rodents and fill holes (U) L007_2011_a_0018: Rodent holes on both sides of levee. Holes in LS hinge 7 and 8 feet deep. Holes in hinge run parallel to levee.: Control rodents and fill holes (U)
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)	**NA**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

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Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0008 **Title:** USACE_CESPK_L007_2011_a_0008_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Vegetation nicely maintained.

Inspect ID: L007_2011_a_0024 **Title:** USACE_CESPK_L007_2011_a_0024_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Vegetation on LS slope longer than 12" obscures visibility for inspection.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0001 **Title:** USACE_CESPK_L007_2011_a_0001_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Top of flap gate visible through water Headwall visible on LS.
	**Inspect ID:** L007_2011_a_0001 **Title:** USACE_CESPK_L007_2011_a_0001_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Flap gate on WS. Top of flap gate visible through water Headwall visible on LS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0002 **Title:** USACE_CESPK_L007_2011_a_0002_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Sluice gate and gate well on WS slope. 6 pilings over pipe. Sluice gate closed.
	**Inspect ID:** L007_2011_a_0002 **Title:** USACE_CESPK_L007_2011_a_0002_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Sluice gate and gate well on WS slope. 6 pilings over pipe. Sluice gate closed.

Levee Embankments
For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0003 **Title:** USACE_CESPK_L007_2011_a_0003_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage Flap gate on WS. headwalls on WS and LS.
	**Inspect ID:** L007_2011_a_0003 **Title:** USACE_CESPK_L007_2011_a_0003_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage Flap gate on WS. headwalls on WS and LS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0004 **Title:** USACE_CESPK_L007_2011_a_0004_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Standpipe on LS. Headwall on WS.
	**Inspect ID:** L007_2011_a_0004 **Title:** USACE_CESPK_L007_2011_a_0004_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Standpipe on LS. Headwall on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0006 **Title:** USACE_CESPK_L007_2011_a_0006_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee Flap gate on WS. Headwalls on WS and LS.

Inspect ID: L007_2011_a_0006 **Title:** USACE_CESPK_L007_2011_a_0006_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee Flap gate on WS. Headwalls on WS and LS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0010 **Title:** USACE_CESPK_L007_2011_a_0010_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Cattle on LS slope have caused holes. Water pondng in holes. Cattle trails on LS slope. LS slope is steeper than 2:1 in this area.

Inspect ID: L007_2011_a_0010 **Title:** USACE_CESPK_L007_2011_a_0010_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Cattle on LS slope have caused holes. Water pondng in holes. Cattle trails on LS slope. LS slope is steeper than 2:1 in this area.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0010 **Title:** USACE_CESPK_L007_2011_a_0010_3.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Cattle on LS slope have caused holes. Water pondng in holes. Cattle trails on LS slope. LS slope is steeper than 2:1 in this area.

Inspect ID: L007_2011_a_0011 **Title:** USACE_CESPK_L007_2011_a_0011_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0011 **Title:** USACE_CESPK_L007_2011_a_0011_2.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.

Inspect ID: L007_2011_a_0012 **Title:** USACE_CESPK_L007_2011_a_0012_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Cattle trail on LS slope 1 foot deep.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0013 **Title:** USACE_CESPK_L007_2011_a_0013_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: LS slope steeper than 2:1 for approx 40 feet. Appears to be caused by cattle.

Inspect ID: L007_2011_a_0016 **Title:** USACE_CESPK_L007_2011_a_0016_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwall on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0017 **Title:** USACE_CESPK_L007_2011_a_0017_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Cattle trails on LS slope causing erosion.
	**Inspect ID:** L007_2011_a_0022 **Title:** USACE_CESPK_L007_2011_a_0022_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.

	**Inspect ID:** L007_2011_a_0022 **Title:** USACE_CESPK_L007_2011_a_0022_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.
	**Inspect ID:** L007_2011_a_0023 **Title:** USACE_CESPK_L007_2011_a_0023_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0023 **Title:** USACE_CESPK_L007_2011_a_0023_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.
	**Inspect ID:** L007_2011_a_0025 **Title:** USACE_CESPK_L007_2011_a_0025_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. For drainage. Headwalls on LS and WS. Flap gate on WS.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0025 **Title:** USACE_CESPK_L007_2011_a_0025_2.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. For drainage. Headwalls on LS and WS. Flap gate on WS.
	**Inspect ID:** L007_2011_a_0026 **Title:** USACE_CESPK_L007_2011_a_0026_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Gaging station on WS slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L007_2011_a_0009 **Title:** USACE_CESPK_L007_2011_a_0009_1.jpg
Rated Item: 10. Animal Control **Caption:** Remarks: Small rodent holes at LS hinge.

Inspect ID: L007_2011_a_0014 **Title:** USACE_CESPK_L007_2011_a_0014_1.jpg
Rated Item: 10. Animal Control **Caption:** Remarks: Rodent holes on both sides of the levee. Holes in crown connect.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L007_2011_a_0014 **Title:** USACE_CESPK_L007_2011_a_0014_2.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent holes on both sides of the levee. Holes in crown connect.
	**Inspect ID:** L007_2011_a_0015 **Title:** USACE_CESPK_L007_2011_a_0015_1.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent holes on both slopes. 6 inch dia holes.

	**Inspect ID:** L007_2011_a_0018 **Title:** USACE_CESPK_L007_2011_a_0018_1.jpg **Rated Item:** 10. Animal Control **Caption:** Remarks: Rodent holes on both sides of levee. Holes in LS hinge 7 and 8 feet deep. Holes in hinge run parallel to levee.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**U**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	L007_2011_a_0005: Barbed wire fence across channel impairing flow. Flow directed towards left bank.: Remove fence from channel and debris (U) L007_2011_a_0019: Barbed wire fence across channel. Minor obstruction to flow.: Remove fence and debris from channel (M)
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	L007_2011_a_0021: Bridge across channel well below elevation of levees.: Ensure bridge is permitted and channel can pass design flow Remove boards during flood season (U)
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	**A**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[2]	**NA**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[3]	**NA**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	
8. Slab and Monolith Joints	**NA**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves[4]	**NA**	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

[4] Proper operation of this item must be demonstrated during the inspection.

	**Inspect ID:** L007_2011_a_0005 **Title:** USACE_CESPK_L007_2011_a_0005_1.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Remarks: Barbed wire fence across channel impairing flow. Flow directed towards left bank.
	**Inspect ID:** L007_2011_a_0019 **Title:** USACE_CESPK_L007_2011_a_0019_1.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Remarks: Barbed wire fence across channel. Minor obstruction to flow.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Inspect ID: L007_2011_a_0021 **Title:** USACE_CESPK_L007_2011_a_0021_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Bridge across channel well below elevation of levees.

Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 7, Bear Creek right bank

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat1	Long1	Lat2	Long2
USACE_CESPK_L007_2011_a_0001	Pipe thru levee. Flap gate on WS. Top of flap gate visible through water Headwall visible on LS.	37.2577	-120.7672	0	0
USACE_CESPK_L007_2011_a_0002	Pipe thru levee. Sluice gate and gate well on WS slope. 6 pilings over pipe. Sluice gate closed.	37.2586	-120.7649	0	0
USACE_CESPK_L007_2011_a_0003	Pipe thru levee for drainage Flap gate on WS. headwalls on WS and LS.	37.2592	-120.7648	0	0
USACE_CESPK_L007_2011_a_0004	Pipe thru levee for drainage. Flap gate on WS. Standpipe on LS. Headwall on WS.	37.2631	-120.7617	0	0
USACE_CESPK_L007_2011_a_0005	Barbed wire fence across channel impairing flow. Flow directed towards left bank.	37.2631	-120.7606	0	0
USACE_CESPK_L007_2011_a_0006	Pipe thru levee Flap gate on WS. Headwalls on WS and LS.	37.2639	-120.7605	0	0
USACE_CESPK_L007_2011_a_0011	Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.	37.2644	-120.7567	0	0
USACE_CESPK_L007_2011_a_0013	LS slope steeper than 2:1 for approx 40 feet. Appears to be caused by cattle.	37.2643	-120.7527	0	0
USACE_CESPK_L007_2011_a_0014	Rodent holes on both sides of the levee. Holes in crown connect.	37.2641	-120.7511	0	0
USACE_CESPK_L007_2011_a_0015	Rodent holes on both slopes. 6 inch dia holes.	37.2640	-120.7509	0	0
USACE_CESPK_L007_2011_a_0016	Pipe thru levee for drainage. Flap gate on WS. Headwall on WS.	37.2639	-120.7506	0	0
USACE_CESPK_L007_2011_a_0017	Cattle trails on LS slope causing erosion.	37.2639	-120.7506	0	0
USACE_CESPK_L007_2011_a_0018	Rodent holes on both sides of levee. Holes in LS hinge 7 and 8 feet deep. Holes in hinge run parallel to levee.	37.2639	-120.7506	0	0
USACE_CESPK_L007_2011_a_0021	Bridge across channel well below elevation of levees.	37.2568	-120.7392	0	0
USACE_CESPK_L007_2011_a_0022	Pipe thru levee for drainage. Flap gate on WS. Headwalls on WS and LS.	37.2558	-120.7373	0	0
USACE_CESPK_L007_2011_a_0023	Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.	37.2548	-120.7349	0	0
USACE_CESPK_L007_2011_a_0024	Vegetation on LS slope longer than 12" obscures visibility for inspection.	37.2518	-120.7291	37.25195	-120.728
USACE_CESPK_L007_2011_a_0025	Pipe thru levee. For drainage. Headwalls on LS and WS. Flap gate on WS.	37.2519	-120.7283	0	0

US Army Corps
of Engineers®

Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System: LSJLD- U 22 north, East Side Canal left bank

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Inspection Start Date: 3/29/2011

Inspection End Date: 3/31/2011

Inspection Report Prepared By: Bob Murakami

Date Report Prepared:

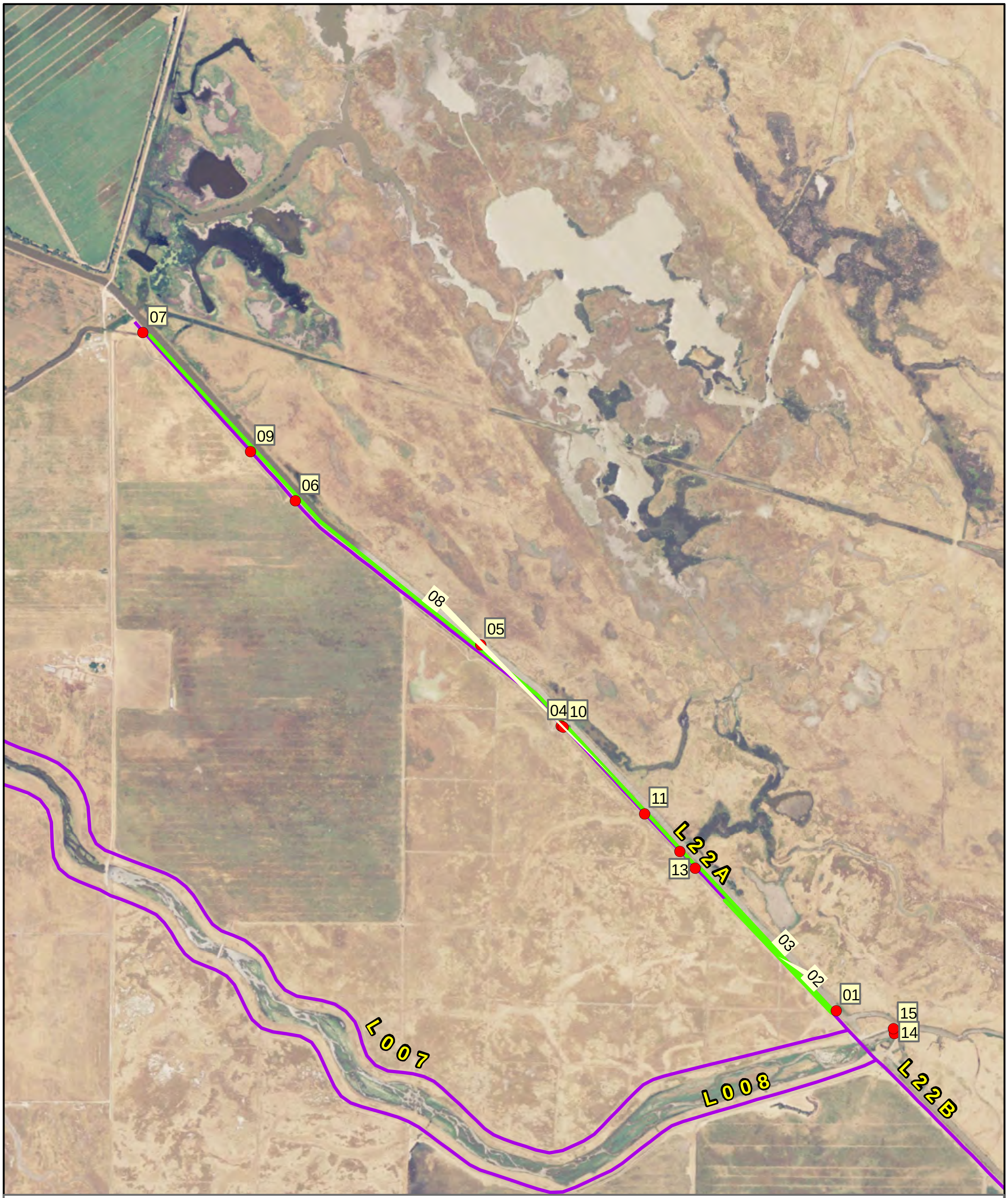
Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approved By:

Date Approved:

Type of Inspection:	☐ **Initial Eligibility Inspection** ☒ **Continuing Eligibility Inspection (Routine)** ☐ **Continuing Eligibility Inspection (Periodic)**	Overall Segment / System Rating:	☐ **Acceptable** ☐ **Minimally Acceptable** ☒ **Unacceptable**
Contents of Report:	☐ **Instructions** ☐ **Initial Eligibility Inspection** ☐ **General Items for All Flood Control Works** ☒ **Levee Embankment** ☐ **Concrete Floodwalls** ☐ **Sheet Pile and Concrete I-walls** ☐ **Interior Drainage System** ☐ **Pump Stations** ☒ **FDR System Channels**	Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached. Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.	



Inspection Point Locations

Lower San Joaquin Levee District
LSJLD- U 22 north, East Side Canal left bank

Id's preceded by USACE_CESPK_L22A_2011_a_00

Legend

● Inspection Point

Inspection Line

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	L22A_2011_a_0009: Tree greater than 2" in WS slope.: NA (U) L22A_2011_a_0010: Tree greater than 12" in dia. in WS slope.: NA (U) L22A_2011_a_0011: Tree greater than 12" in WS slope.: NA (U) L22A_2011_a_0012: Tree greater than 2" in dia in WS slope.: NA (U) L22A_2011_a_0013: Tree in WS slope.: NA (U)
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**NA**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	L22A_2011_a_0002: Ditch along LS at toe.: Ensure ditch is not a threat to the levee (M) L22A_2011_a_0007: Pipe thru levee. Sluice gate and gatewell on WS hinge.: Video inspect pipe thru levee (U)
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Closures) (A or U only)		**U**	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR segment / system.	
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	L22A_2011_a_0003: Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.: Restore levee to as built cross section (U) L22A_2011_a_0008: Erosion of WS slope.: Restore slope to As built section (U)
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[2]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**M**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	L22A_2011_a_0004: Depressions in crown. Less than 6" deep.: Grade crown so water does not pond (M) L22A_2011_a_0006: Depressions in crown less than 6" deep.: Grade crown so water does not pond. (M)
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	Physical evidence in other segments of this system that the rodent control program is not effective.
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	
11. Culverts/ Discharge Pipes[3] (This item includes both concrete and corrugated metal pipes.)	**NA**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	
12. Riprap Revetments &	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
Bank Protection		**M**	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**NA**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR segment / system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR segment / system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR segment / system.	
15. Seepage		**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

[2] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

[3] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L22A_2011_a_0009 **Title:** USACE_CESPK_L22A_2011_a_0009_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Tree greater than 2" in WS slope.
	**Inspect ID:** L22A_2011_a_0010 **Title:** USACE_CESPK_L22A_2011_a_0010_1.jpg **Rated Item:** 1. Unwanted Vegetation Growth **Caption:** Remarks: Tree greater than 12" in dia. in WS slope.

Levee Embankments
For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L22A_2011_a_0011 **Title:** USACE_CESPK_L22A_2011_a_0011_1.jpg
Rated Item: 1. Unwanted Vegetation Growth **Caption:** Remarks: Tree greater than 12" in WS slope.

Inspect ID: L22A_2011_a_0012 **Title:** USACE_CESPK_L22A_2011_a_0012_1.jpg
Rated Item: 1. Unwanted Vegetation Growth **Caption:** Remarks: Tree greater than 2" in dia in WS slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L22A_2011_a_0013 **Title:** USACE_CESPK_L22A_2011_a_0013_1.jpg
Rated Item: 1. Unwanted Vegetation Growth **Caption:** Remarks: Tree in WS slope.

Inspect ID: L22A_2011_a_0002 **Title:** USACE_CESPK_L22A_2011_a_0002_1.jpg
Rated Item: 3. Encroachments **Caption:** Remarks: Ditch along LS at toe.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L22A_2011_a_0007 **Title:** USACE_CESPK_L22A_2011_a_0007_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Pipe thru levee. Sluice gate and gatewell on WS hinge.

Inspect ID: L22A_2011_a_0003 **Title:** USACE_CESPK_L22A_2011_a_0003_1.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

	**Inspect ID:** L22A_2011_a_0003 **Title:** USACE_CESPK_L22A_2011_a_0003_2.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.
	**Inspect ID:** L22A_2011_a_0003 **Title:** USACE_CESPK_L22A_2011_a_0003_3.jpg **Rated Item:** 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L22A_2011_a_0003 **Title:** USACE_CESPK_L22A_2011_a_0003_4.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.

Inspect ID: L22A_2011_a_0008 **Title:** USACE_CESPK_L22A_2011_a_0008_1.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Inspect ID: L22A_2011_a_0008 **Title:** USACE_CESPK_L22A_2011_a_0008_2.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope.

Inspect ID: L22A_2011_a_0008 **Title:** USACE_CESPK_L22A_2011_a_0008_3.jpg
Rated Item: 6. Erosion/ Bank Caving **Caption:** Remarks: Erosion of WS slope.

	**Inspect ID:** L22A_2011_a_0004 **Title:** USACE_CESPK_L22A_2011_a_0004_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Remarks: Depressions in crown. Less than 6" deep.
	**Inspect ID:** L22A_2011_a_0006 **Title:** USACE_CESPK_L22A_2011_a_0006_1.jpg **Rated Item:** 8. Depressions/ Rutting **Caption:** Remarks: Depressions in crown less than 6" deep.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
1. Vegetation and Obstructions	**U**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	L22A_2011_a_0005: Bridge in channel. Bridge is falling apart.: Remove bridge from channel and any debris that catches on piers (U)
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	L22A_2011_a_0001: Weir across canal. (Stephenson irrigation district).: Ensure weir is permitted. and canal can pass design flow (U)
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	**M**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	L22A_2011_a_0014: Cracking in LB wingwall on downstream end of control structure.: Monitor crack (M) L22A_2011_a_0015: Spalling on RB wall. Upstream end of structure.: Monitor (M)
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[2]	**NA**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[3]	**NA**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	
8. Slab and Monolith Joints	**NA**	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/Remarks/Recommendations
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/ Flap Valves/ Pinch Valves[4]	**NA**	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	**NA**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the segment / system, or riprap is discussed in another section.	
11. Revetments other than Riprap	**NA**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the segment / system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

[2] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[3] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

[4] Proper operation of this item must be demonstrated during the inspection.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

	**Inspect ID:** L22A_2011_a_0005 **Title:** USACE_CESPK_L22A_2011_a_0005_1.jpg **Rated Item:** 1. Vegetation and Obstructions **Caption:** Remarks: Bridge in channel. Bridge is falling apart.
	**Inspect ID:** L22A_2011_a_0001 **Title:** USACE_CESPK_L22A_2011_a_0001_1.jpg **Rated Item:** 3. Encroachments **Caption:** Remarks: Weir across canal. (Stephenson irrigation district).

	**Inspect ID:** L22A_2011_a_0014 **Title:** USACE_CESPK_L22A_2011_a_0014_1.jpg **Rated Item:** 5. Concrete Surfaces **Caption:** Remarks: Cracking in LB wingwall on downstream end of control structure.
	**Inspect ID:** L22A_2011_a_0015 **Title:** USACE_CESPK_L22A_2011_a_0015_1.jpg **Rated Item:** 5. Concrete Surfaces **Caption:** Remarks: Spalling on RB wall. Upstream end of structure.

Unacceptable Inspection Points, Lower San Joaquin Levee District, Unit 22 north East Side Canal left bank

(Deficiencies likely to prevent performance in the next flood event are highlighted red & orange)

Inspection ID	Remarks	Lat1	Long1	Lat2	Long2
USACE_CESPK_L22A_2011_a_0001	Weir across canal. (Stephenson irrigation district).	37.2553	-120.7200	0	0
USACE_CESPK_L22A_2011_a_0003	Erosion of WS slope along entire reach. Biggest problem along bottom 1/2 of levee.	37.2553	-120.7201	37.25879	-120.724
USACE_CESPK_L22A_2011_a_0005	Bridge in channel. Bridge is falling apart.	37.2644	-120.7311	0	0
USACE_CESPK_L22A_2011_a_0007	Pipe thru levee. Sluice gate and gatewell on WS hinge.	37.2721	-120.7416	0	0
USACE_CESPK_L22A_2011_a_0008	Erosion of WS slope.	37.2589	-120.7244	37.27204	-120.741
USACE_CESPK_L22A_2011_a_0009	Tree greater than 2" in WS slope.	37.2692	-120.7383	0	0
USACE_CESPK_L22A_2011_a_0010	Tree greater than 12" in dia. in WS slope.	37.2623	-120.7285	0	0
USACE_CESPK_L22A_2011_a_0011	Tree greater than 12" in WS slope.	37.2602	-120.7260	0	0
USACE_CESPK_L22A_2011_a_0012	Tree greater than 2" in dia in WS slope.	37.2592	-120.7249	0	0
USACE_CESPK_L22A_2011_a_0013	Tree in WS slope.	37.2588	-120.7244	0	0

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

JAN 30 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between March 31st and April 6th, 2011, inspectors Bob Murakami and Ryan Larson from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 1, 6, and 11 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The Report Card, Map, and Levee Inspection Report with photos serve as a summary of the inspection.

This system is comprised of 3 segments:

Segment Name
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the LSJLD-Units 1, 6, and 11 system is rated Minimally Acceptable and active for PL 84-99 rehabilitation assistance.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, encroachments, depressions/rutting, and concrete surfaces (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition or the items will be noted as pink during the next inspection and will cause the system to become inactive. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channels portions of the system. Ensure that at concrete structures, any spalling or cracking is repaired. Any exposed rebar in concrete control structures should be repaired immediately.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the conditions in the sponsor issued encroachment permit are being met.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement. We appreciate the collective efforts of the LSJLD to complete repairs of unacceptable items to improve the overall condition of the system. LSJLD provided documentation of repairs, including photos, showing corrections to unacceptable (red) items in the checklist. We urge your Board and the LSJLD to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable USACE inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the California Emergency Management Agency, Merced County Office of Emergency Services, and FEMA Region IX.

Sincerely,

Rick L. Poeppelman

Rick L. Poeppelman, P.E.
Levee Safety Officer
Chief, Engineering Division

Enclosures:

1) Map
2) Report card
3) Detailed inspection report

System
LSJLD-Units 1, 6, and 11
Minimally Acceptable - Active

		LSJLD- U 1 San Joaquin R rt bnk below Mariposa Byp (L01B)	LSJLD- U6 Deep Slgh left bank below Mariposa Byp (L06A)	LSJLD-U 11 Mariposa Bypass north levee (L011)						
General	Operations and Maintenance Manuals	A	A	A						
	Emergency Supplies and Equipment	A	A	A						
	Flood Preparedness and Training	A	A	A						
Levee Embankments	Unwanted Vegetation Growth	U	M	U						
	Sod Cover	NA	NA	NA						
	Encroachments	U	U	U						
	Closure Structures	NA	NA	NA						
	Slope Stability	A	M	A						
	Erosion/Bank Caving	A	M	A						
	Settlement	A	A	A						
	Depressions/Rutting	U	A	A						
	Cracking	A	A	A						
	Animal Control	M	M	A						
	Culverts/Discharge Pipes	NA	NA	NA						
	Riprap Revetments & Bank Protection	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA						
	Seepage	A	A	A						
Flood Damage Reduction Channels	Vegetation and Obstructions	A	M	A						
	Shoaling	A	A	A						
	Encroachments	A	U	M						
	Erosion	A	A	A						
	Concrete Surfaces	NA	A	U						
	Tilting, Sliding, or Settlement of Concrete	NA	NA	M						
	Foundation of Concrete Structures	NA	NA	NA						
	Slab and Monolith Joints	NA	NA	NA						
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA						
	Riprap Revetments & Banks	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

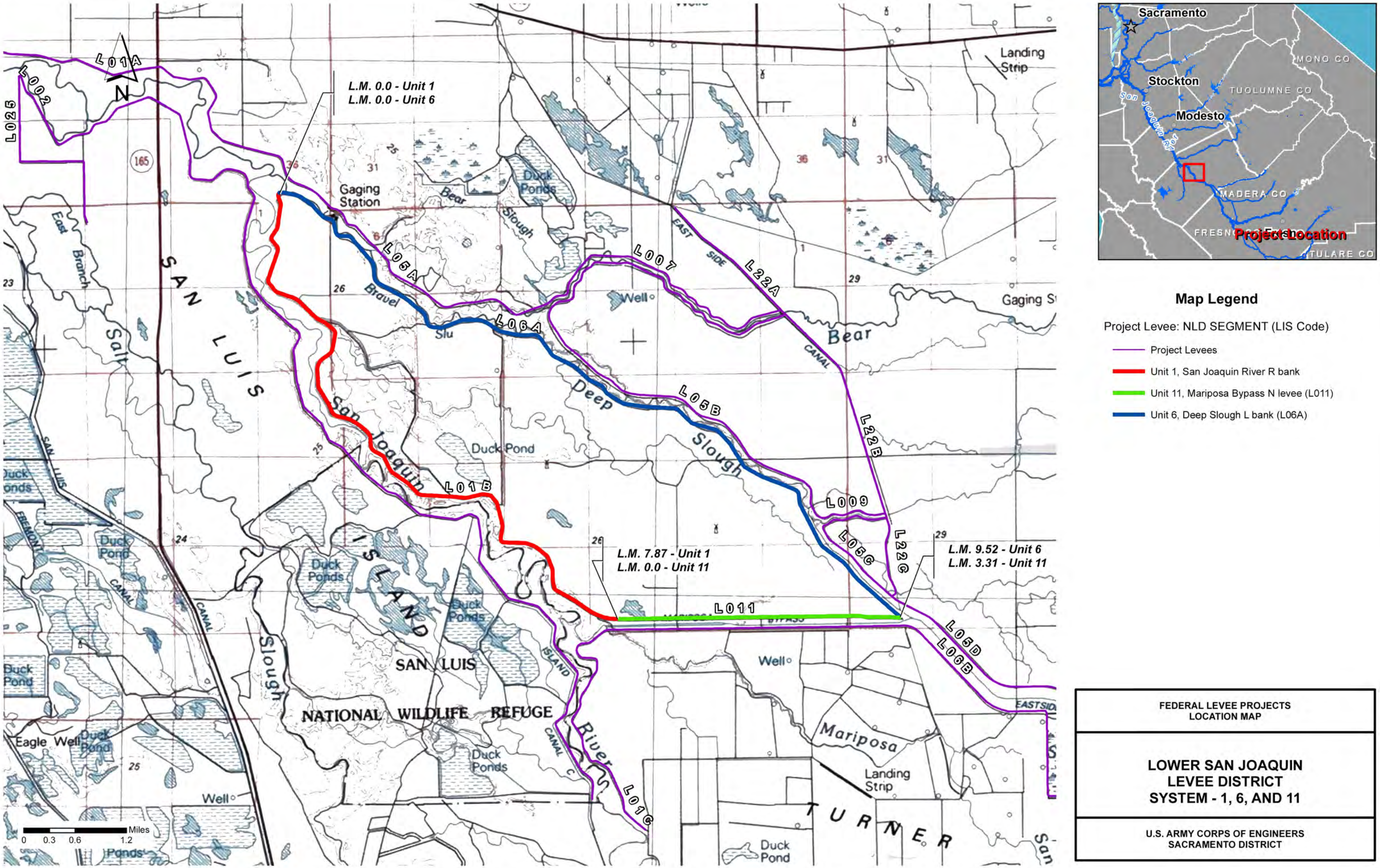
Not Likely to Prevent Performance In Next Flood Event/Active

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

8/13/2012



FEDERAL LEVEE PROJECTS
LOCATION MAP

**LOWER SAN JOAQUIN
LEVEE DISTRICT
SYSTEM - 1, 6, AND 11**

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass/LSJLD-Units 1, 6, and 11

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan Date of Inspection: 3/31/2011 - 4/6/2011

Inspection Report Prepared By: Kaylee Peterson Date Report Prepared: ____________

Internal Technical Review (for Periodic Inspections) By: ____________ Date of ITR: ____________

Final Approval By: ____________ Date Approved: ____________

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☑ **Minimally Acceptable**
☐ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**A**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Depressions/ Rutting		U	Depression ponding water on LS toe. Greater than 6" deep. : Restore slope so water does not pond on slope.	37.273843 ° -120.825518 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Cattle grazing the levee. Cattle trails on LS and WS. Hoof prints in slopes. : Restore levee slopes and control cattle.	37.275440 ° -120.825980 °	37.272080 ° -120.825830 °	0002 Y
3			Levee Embankments	Animal Control		M	Rodent holes at WS hinge. Holes 1-2" in dia. : Control rodents and fill holes.	37.266220 ° -120.826240 °	37.261430 ° -120.828280 °	0003 Y
4			Levee Embankments	Animal Control		M	Rodent hole in crown. : Control rodents and fill holes.	37.260502 ° -120.828182 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Animal Control		M	Small dia rodent holes at crown. : Control rodents and fill holes.	37.259200 ° -120.826847 °	0.000000 ° 0.000000 °	0006
6			Levee Embankments	Encroachments		M	Cattle trail on LS slope. : Restore slope.	37.258945 ° -120.826385 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working, : Video inspect pipe thru levee.	37.256895 ° -120.821302 °	0.000000 ° 0.000000 °	0008 Y
8			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.237598 ° -120.813003 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. : Video inspect pipe thru levee.	37.228175 ° -120.802677 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate appears to be working. : Video inspect pipe thru levee.	37.226105 ° -120.799115 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Depressions/ Rutting		U	Rutting at LS hinge. As deep as 10". : Repair rutting.	37.224060 ° -120.793195 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Unwanted Vegetation Growth		U	Tree greater than 2" in dia on WS slope. : NA	37.224062 ° -120.792967 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments		U	Ditch at LS toe. : Remove from project right of way.	37.224150 ° -120.793340 °	37.224300 ° -120.783840 °	0015 Y
14			Levee Embankments	Encroachments		U	Ditch at LS toe. : Remove from project right of way.	37.224320 ° -120.783640 °	37.222870 ° -120.780360 °	0016
15			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Both sides submerged. : Video inspect pipe thru levee.	37.221908 ° -120.780245 °	0.000000 ° 0.000000 °	0017
16			Levee Embankments	Encroachments		U	Power pole at WS within 10 feet of toe. : Ensure pole is permitted or remove from project right of way.	37.216948 ° -120.779747 °	0.000000 ° 0.000000 °	0018 Y
17			Levee Embankments	Unwanted Vegetation Growth		U	Long grasses and weeds on levee slopes obscures visibility for inspection. Grasses 2 feet long. Thistle patches 4 feet tall. : Mow or cut grasses and weeds.	37.258660 ° -120.825340 °	37.216000 ° -120.774810 °	0020 Y
18			Levee Embankments	Animal Control		A	Rodent holes at WS hinge point. 1-2" diameter holes. (Fixed by LMA after inspection) : NA	37.214640 ° -120.771580 °	37.214480 ° -120.771350 °	0021 Y
19			Levee Embankments	Animal Control		A	Rodent holes on both sides of crown along hinge. (Fixed by LMA after inspection) : NA	37.212198 ° -120.769263 °	0.000000 ° 0.000000 °	0022 Y
20			Levee Embankments	Unwanted Vegetation Growth		U	Weeds on LS slope obscures visibility for inspection. : Cut or mow weeds.	37.207642 ° -120.766828 °	0.000000 ° 0.000000 °	0025 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L01B_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
21			Levee Embankments	Animal Control		M	Rodent holes on crown. 1-2" diameter holes. : Control rodents and fill holes.	37.211950 ° -120.769140 °	37.207310 ° -120.767300 °	0026
22			Levee Embankments	Encroachments		U	Pipe thru levee for irrigation. Pump on WS. Separate conduit for electricity. No WS positive closure device. Power pole on LS in overbuilt area. : Video inspect pipe thru levee. Confirm permit status.	37.205060 ° -120.762730 °	0.000000 ° 0.000000 °	0027 Y
23			Levee Embankments	Encroachments		U	Pipe thru levee. Gate well and sluice gate on WS slope. Headwall on LS. WS end submerged. : Video inspect pipe thru levee.	37.202837 ° -120.756225 °	0.000000 ° 0.000000 °	0028 Y
24			Levee Embankments	Encroachments		M	Damage from cattle on both slopes. Cattle trail LS on slopes. : Restore slopes.	37.204980 ° -120.762600 °	37.202840 ° -120.756340 °	0029

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.
[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L01B_2011_a_####.
[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Depression ponding water on LS toe. Greater than 6" deep.

USACE_CESPK_L01B_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.273843 ° -120.825518 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle grazing the levee. Cattle trails on LS and WS. Hoof prints in slopes.

USACE_CESPK_L01B_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.275440 ° -120.825980 °	37.272080 ° -120.825830 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle grazing the levee. Cattle trails on LS and WS. Hoof prints in slopes.

USACE_CESPK_L01B_2011_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.275440 ° -120.825980 °	37.272080 ° -120.825830 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle grazing the levee. Cattle trails on LS and WS. Hoof prints in slopes.

USACE_CESPK_L01B_2011_a_0002_3.jpg

GPS Latitude/Longitude	
Start	End
37.275440 ° -120.825980 °	37.272080 ° -120.825830 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes at WS hinge. Holes 1-2" in dia.

USACE_CESPK_L01B_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.266220 ° -120.826240 °	37.261430 ° -120.828280 °
Rating³: M	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent hole in crown.

USACE_CESPK_L01B_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.260502 ° -120.828182 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on LS slope.

USACE_CESPK_L01B_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.258945 ° -120.826385 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working,

USACE_CESPK_L01B_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.256895 ° -120.821302 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L01B_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.237598 ° -120.813003 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0010
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged.

USACE_CESPK_L01B_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.228175 °	0.000000 °
-120.802677 °	0.000000 °
Rating[3]:	U

LIS Issue Number[1]	0011
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Flap gate appears to be working.

USACE_CESPK_L01B_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.226105 °	0.000000 °
-120.799115 °	0.000000 °
Rating[3]:	U

LIS Issue Number[1]	0012
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting at LS hinge. As deep as 10".

USACE_CESPK_L01B_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.224060 °	0.000000 °
-120.793195 °	0.000000 °
Rating[3]:	U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting at LS hinge. As deep as 10".

USACE_CESPK_L01B_2011_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.224060 ° -120.793195 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree greater than 2" in dia on WS slope.

USACE_CESPK_L01B_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.224062 ° -120.792967 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Ditch at LS toe.

USACE_CESPK_L01B_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.224150 ° -120.793340 °	37.224300 ° -120.783840 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0018
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Power pole at WS within 10 feet of toe.

USACE_CESPK_L01B_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.216948 ° -120.779747 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0020
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Long grasses and weeds on levee slopes obscures visibility for inspection. Grasses 2 feet long. Thistle patches 4 feet tall.

USACE_CESPK_L01B_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.258660 ° -120.825340 °	37.216000 ° -120.774810 °
Rating[3]: U	

LIS Issue Number[1]	0020
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Long grasses and weeds on levee slopes obscures visibility for inspection. Grasses 2 feet long. Thistle patches 4 feet tall.

USACE_CESPK_L01B_2011_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
37.258660 ° -120.825340 °	37.216000 ° -120.774810 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0020
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Long grasses and weeds on levee slopes obscures visibility for inspection. Grasses 2 feet long. Thistle patches 4 feet tall.

USACE_CESPK_L01B_2011_a_0020_3.jpg

GPS Latitude/Longitude	
Start	End
37.258660 ° -120.825340 °	37.216000 ° -120.774810 °
Rating[3]: U	

LIS Issue Number[1]	0021
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes at WS hinge point. 1-2" diameter holes. (Fixed by LMA after inspection)

USACE_CESPK_L01B_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.214640 ° -120.771580 °	37.214480 ° -120.771350 °
Rating[3]: A	

LIS Issue Number[1]	0021
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes at WS hinge point. 1-2" diameter holes. (Fixed by LMA after inspection)

USACE_CESPK_L01B_2011_a_0021_2.jpg

GPS Latitude/Longitude	
Start	End
37.214640 ° -120.771580 °	37.214480 ° -120.771350 °
Rating[3]: A	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of crown along hinge. (Fixed by LMA after inspection)

USACE_CESPK_L01B_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.212198 ° -120.769263 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of crown along hinge. (Fixed by LMA after inspection)

USACE_CESPK_L01B_2011_a_0022_2.jpg

GPS Latitude/Longitude	
Start	End
37.212198 ° -120.769263 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Weeds on LS slope obscures visibility for inspection.

USACE_CESPK_L01B_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.207642 ° -120.766828 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0026
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on crown. 1-2" diameter holes.

USACE_CESPK_L01B_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.211950 ° -120.769140 °	37.207310 ° -120.767300 °
Rating[3]: M	

LIS Issue Number[1]	0027
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee for irrigation. Pump on WS. Separate conduit for electricity. No WS positive closure device. Power pole on LS in overbuilt area.

USACE_CESPK_L01B_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.205060 ° -120.762730 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0027
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee for irrigation. Pump on WS. Separate conduit for electricity. No WS positive closure device. Power pole on LS in overbuilt area.

USACE_CESPK_L01B_2011_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
37.205060 ° -120.762730 °	0.000000 ° 0.000000 °
Rating[3]: U	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 1, San Joaquin River right bank below Mariposa Bypass (L01B)	Right	7.87	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Gate well and sluice gate on WS slope. Headwall on LS. WS end submerged.

USACE_CESPK_L01B_2011_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
37.202837 ° -120.756225 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Gate well and sluice gate on WS slope. Headwall on LS. WS end submerged.

USACE_CESPK_L01B_2011_a_0028_2.jpg

GPS Latitude/Longitude	
Start	End
37.202837 ° -120.756225 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass/LSJLD-Units 1, 6, and 11

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: 3/31/2011 - 4/6/2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ____

Internal Technical Review (for Periodic Inspections) By: ____   Date of ITR: ____

Final Approval By: ____   Date Approved: ____

Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
- ☐ **Acceptable**
- ☑ **Minimally Acceptable**
- ☐ **Unacceptable**

Contents of this Report:
- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**M**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**M**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**N/A**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**M**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**M**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**M**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		A	Eastside Bypass Control Structure looks good. Negligible spalling or cracking. : NA	37.204678 ° -120.697267 °	0.000000 ° 0.000000 °	0001
2			Flood Damage Reduction Channels	Encroachments		U	Pipes thru Mariposa bypass control structure. Closure devices available. : Video inspect pipes.	37.202041 ° -120.694704 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Erosion/ Bank Caving		M	Erosion on WS of levee. Not in prism but within 35 feet of prism. : Control erosion and repair before levee is threatened.	37.203139 ° -120.695089 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		M	Electrical boxes along WS hinge. Appear to be outside prism. Runs parallel to levee. : Ensure lines are permitted.	37.202450 ° -120.695200 °	37.204010 ° -120.697420 °	0004 Y
5			Levee Embankments	Encroachments		M	Damage to both slopes from cattle grazing. Water ponding in hoof prints. : Restore slopes.	37.202390 ° -120.695280 °	37.211260 ° -120.706450 °	0005 Y
6			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate working. WS submerged. : Video inspect pipe thru levee.	37.213298 ° -120.709427 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate is working. WS submerged. : Video inspect pipe thru levee.	37.216508 ° -120.712923 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate working. WS of pipe submerged. : Video inspect pipe thru levee.	37.222763 ° -120.716408 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate is working. : Video inspect pipe thru levee.	37.226108 ° -120.722738 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Sluice gate in gatewell at WS hinge. : Video inspect pipe thru levee.	37.228283 ° -120.727843 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Encroachments		A	Electrical conduit thru levee. Poles in WS slope. Conduit open at WS. (Fixed by LMA after inspection.) : Ensure conduit and poles are permitted.	37.228425 ° -120.728005 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Encroachments		U	Utility poles at LS toe and within 10 feet. : Ensure poles are permitted or remove from project right of way.	37.226800 ° -120.724650 °	37.229700 ° -120.729020 °	0012 Y
13			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Debris at bridge. : Remove debris.	37.229852 ° -120.728485 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments		U	Pipe thru levee. Slide gate and gate well on WS slope. Headwall on LS. : Video inspect pipe thru levee.	37.230502 ° -120.729588 °	0.000000 ° 0.000000 °	0014 Y
15			Levee Embankments	Animal Control		A	Rodent holes on both slopes. 1-2" dia holes. (Fixed by LMA after inspection.) : NA	37.235895 ° -120.739045 °	0.000000 ° 0.000000 °	0017 Y
16			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on both slopes. Flap gate appears to be working. WS submerged. : Video inspect pipe thru levee.	37.236407 ° -120.739708 °	0.000000 ° 0.000000 °	0018 Y
17			Levee Embankments	Encroachments		M	Cattle trail on both slopes near fence. : Restore slopes.	37.238370 ° -120.742772 °	0.000000 ° 0.000000 °	0019 Y
18			Levee Embankments	Animal Control		M	Rodent holes in crown. : Control rodents and fill holes.	37.238482 ° -120.743932 °	0.000000 ° 0.000000 °	0020 Y
19			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working : Video inspect pipe thru levee.	37.238602 ° -120.746608 °	0.000000 ° 0.000000 °	0021 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06A_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
20			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working, Earthen ring around LS end of pipe. : Video inspect pipe thru levee.	37.239105 ° -120.751747 °	0.000000 ° 0.000000 °	0022 Y
21			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.242003 ° -120.757573 °	0.000000 ° 0.000000 °	0023 Y
22			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Both sides submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.243395 ° -120.760595 °	0.000000 ° 0.000000 °	0024 Y
23			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate in gate well at WS slope. Headwall on LS. No flap gate on WS end of pipe. : Video inspect pipe thru levee.	37.243955 ° -120.761285 °	0.000000 ° 0.000000 °	0025 Y
24			Levee Embankments	Encroachments		U	Barbed wire fence parallel to levee at WS toe. : Remove fence from project right of way.	37.243570 ° -120.760790 °	37.244370 ° -120.761840 °	0026 Y
25			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate appears to be working. WS submerged. : Video inspect pipe thru levee.	37.246460 ° -120.765458 °	0.000000 ° 0.000000 °	0027 Y
26			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Both sides submerged. : Video inspect pipe thru levee.	37.248323 ° -120.768892 °	0.000000 ° 0.000000 °	0028
27			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on WS and LS. Sluice gate in gate well accessible from WS hinge. : Video inspect pipe thru levee.	37.250750 ° -120.770998 °	0.000000 ° 0.000000 °	0029 Y
28			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on LS and WS. Flap gate on WS. : Video inspect pipe thru levee.	37.251133 ° -120.774478 °	0.000000 ° 0.000000 °	0030 Y
29			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on LS and WS. Sluice gate in gate well accessible from WS hinge. : Video inspect pipe thru levee.	37.251640 ° -120.778540 °	0.000000 ° 0.000000 °	0031 Y
30			Levee Embankments	Encroachments		U	Distribution box at WS hinge for hydraulic gates. "Rodney Hunt" sticker on box. Pipes thru levee according to LMA. Pipe were not visible due to high water. Pump station on LS outside of project boundary. No positive closure at WS hinge of crown. : Confirm permit status and video inspect pipes thru levee.	37.251872 ° -120.779370 °	0.000000 ° 0.000000 °	0032 Y
31			Levee Embankments	Encroachments		U	Fence at LS toe & on LS slope. : Ensure fence is outside of project right of way.	37.251700 ° -120.778880 °	37.252860 ° -120.781270 °	0033 Y
32			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwalls on WS and LS. : Video inspect pipe thru levee.	37.253490 ° -120.782490 °	0.000000 ° 0.000000 °	0034 Y
33			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on WS and LS. Both sides submerged. : Video inspect pipe thru levee.	37.253812 ° -120.786067 °	0.000000 ° 0.000000 °	0036 Y
34			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on both sides. WS submerged. Flap gate appears to be working, : Video inspect pipe thru levee.	37.253033 ° -120.790238 °	0.000000 ° 0.000000 °	0037 Y
35			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on both sides. Flap gate on WS. : Video inspect pipe thru levee.	37.252783 ° -120.793788 °	0.000000 ° 0.000000 °	0038 Y
36			Levee Embankments	Animal Control		M	Rodent holes on LS near pipe headwall. Rodents physically present at this location. : Control rodents and fill holes.	37.252757 ° -120.793835 °	0.000000 ° 0.000000 °	0039 Y
37			Levee Embankments	Slope Stability		M	Depressions on LS slope near hinge. Material slid down slope 6 feet long. : Restore slope.	37.252768 ° -120.793915 °	0.000000 ° 0.000000 °	0040 Y

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² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06A_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
38			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on both sides. Sluice gate in gate well accessible from WS hinge. No flap gate. : Video inspect pipe thru levee.	37.252968 ° -120.794330 °	0.000000 ° 0.000000 °	0041 Y
39			Levee Embankments	Encroachments		M	Fence along LS levee toe. Approx. 5 to 6 feet from toe. : Ensure fence is outside of project right of way.	37.255070 ° -120.795480 °	37.259520 ° -120.803300 °	0042 Y
40			Levee Embankments	Animal Control		M	Rodent holes in LS slope. 9 + holes in this location. Diameters as wide as 9". : Control rodents and fill holes.	37.260463 ° -120.805240 °	0.000000 ° 0.000000 °	0043 Y
41			Levee Embankments	Animal Control		M	Rodent holes on LS slope. 1 hole was 4 feet deep, 5 inches wide. 9 + holes in this area. : Control rodents and fill holes.	37.260655 ° -120.805503 °	0.000000 ° 0.000000 °	0044 Y
42			Levee Embankments	Encroachments		U	Barbed wire fence along LS of levee and up LS slope. : Ensure fence is outside of project right of way.	37.261530 ° -120.805840 °	37.266100 ° -120.808600 °	0045 Y
43			Levee Embankments	Unwanted Vegetation Growth		M	Weeds longer than 12" on LS slope. : Cut or mow weeds.	37.268795 ° -120.813805 °	0.000000 ° 0.000000 °	0046 Y
44			Levee Embankments	Unwanted Vegetation Growth		M	Weeds on LS slope obscure visibility for inspection. : Cut or mow weeds.	37.270810 ° -120.814450 °	0.000000 ° 0.000000 °	0047
45			Levee Embankments	Encroachments		U	Pipe thru levee. Pump in channel. Irrigation ditch perpendicular to levee on LS. Slide gate on WS slope. Power pole and guy wire on WS slope. : Video inspect pipe thru levee. Ensure pipe and poles meet permit conditions.	37.271465 ° -120.815858 °	0.000000 ° 0.000000 °	0048 Y
46			Levee Embankments	Animal Control		M	Rodent holes on LS slope. : Control indents and fill holes.	37.271715 ° -120.816613 °	0.000000 ° 0.000000 °	0049 Y
47			Levee Embankments	Encroachments		M	Cattle trails on both slopes. : Restore slopes.	37.275790 ° -120.824170 °	37.275970 ° -120.825320 °	0050 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06A_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Pipes thru Mariposa bypass control structure. Closure devices available.

USACE_CESPK_L06A_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.202041 ° -120.694704 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion on WS of levee. Not in prism but within 35 feet of prism.

USACE_CESPK_L06A_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.203139 ° -120.695089 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Electrical boxes along WS hinge. Appear to be outside prism. Runs parallel to levee.

USACE_CESPK_L06A_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.202450 ° -120.695200 °	37.204010 ° -120.697420 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Damage to both slopes from cattle grazing. Water ponding in hoof prints.	

USACE_CESPK_L06A_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.202390 ° -120.695280 °	37.211260 ° -120.706450 °
Rating³: M	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe thru levee. Headwall on LS. Flap gate working. WS submerged.	

USACE_CESPK_L06A_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.213298 ° -120.709427 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe thru levee. Headwall on LS. Flap gate is working. WS submerged.	

USACE_CESPK_L06A_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.216508 ° -120.712923 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Flap gate working. WS of pipe submerged.

USACE_CESPK_L06A_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.222763 ° -120.716408 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate is working.

USACE_CESPK_L06A_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.226108 ° -120.722738 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Sluice gate in gatewell at WS hinge.

USACE_CESPK_L06A_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.228283 ° -120.727843 °	0.000000 ° 0.000000 °
Rating³: U	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Sluice gate in gatewell at WS hinge.

USACE_CESPK_L06A_2011_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
37.228283 ° -120.727843 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Sluice gate in gatewell at WS hinge.

USACE_CESPK_L06A_2011_a_0010_3.jpg

GPS Latitude/Longitude	
Start	End
37.228283 ° -120.727843 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Electrical conduit thru levee. Poles in WS slope. Conduit open at WS. (Fixed by LMA after inspection.)

USACE_CESPK_L06A_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.228425 ° -120.728005 °	0.000000 ° 0.000000 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Electrical conduit thru levee. Poles in WS slope. Conduit open at WS. (Fixed by LMA after inspection.)	

USACE_CESPK_L06A_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.228425 ° -120.728005 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments
Remarks: Utility poles at LS toe and within 10 feet.	

USACE_CESPK_L06A_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.226800 ° -120.724650 °	37.229700 ° -120.729020 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions
Remarks: Debris at bridge.	

USACE_CESPK_L06A_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.229852 ° -120.728485 °	0.000000 ° 0.000000 °
Rating³: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slide gate and gate well on WS slope. Headwall on LS.

USACE_CESPK_L06A_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.230502 ° -120.729588 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slide gate and gate well on WS slope. Headwall on LS.

USACE_CESPK_L06A_2011_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
37.230502 ° -120.729588 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both slopes. 1-2" dia holes. (Fixed by LMA after inspection.)

USACE_CESPK_L06A_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.235895 ° -120.739045 °	0.000000 ° 0.000000 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0017
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both slopes. 1-2" dia holes. (Fixed by LMA after inspection.)

USACE_CESPK_L06A_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.235895 ° -120.739045 °	0.000000 ° 0.000000 °

Rating[3]: A

LIS Issue Number[1]	0018
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on both slopes. Flap gate appears to be working. WS submerged.

USACE_CESPK_L06A_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.236407 ° -120.739708 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0018
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on both slopes. Flap gate appears to be working. WS submerged.

USACE_CESPK_L06A_2011_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.236407 ° -120.739708 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on both slopes near fence.

USACE_CESPK_L06A_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.238370 ° -120.742772 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes in crown.

USACE_CESPK_L06A_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.238482 ° -120.743932 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working

USACE_CESPK_L06A_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.238602 ° -120.746608 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working, Earthen ring around LS end of pipe.

USACE_CESPK_L06A_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.239105 ° -120.751747 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L06A_2011_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.242003 ° -120.757573 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Both sides submerged. Flap gate appears to be working.

USACE_CESPK_L06A_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.243395 ° -120.760595 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate in gate well at WS slope. Headwall on LS. No flap gate on WS end of pipe.

USACE_CESPK_L06A_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.243955 ° -120.761285 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate in gate well at WS slope. Headwall on LS. No flap gate on WS end of pipe.

USACE_CESPK_L06A_2011_a_0025_2.jpg

GPS Latitude/Longitude	
Start	End
37.243955 ° -120.761285 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence parallel to levee at WS toe.

USACE_CESPK_L06A_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.243570 ° -120.760790 °	37.244370 ° -120.761840 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Flap gate appears to be working. WS submerged.

USACE_CESPK_L06A_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.246460 °	0.000000 °
-120.765458 °	0.000000 °

Rating³: U

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on WS and LS. Sluice gate in gate well accessible from WS hinge.

USACE_CESPK_L06A_2011_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.250750 °	0.000000 °
-120.770998 °	0.000000 °

Rating³: U

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on WS and LS. Sluice gate in gate well accessible from WS hinge.

USACE_CESPK_L06A_2011_a_0029_2.jpg

GPS Latitude/Longitude	
Start	End
37.250750 °	0.000000 °
-120.770998 °	0.000000 °

Rating³: U

---

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.

USACE_CESPK_L06A_2011_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
37.251133 ° -120.774478 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on LS and WS. Flap gate on WS.

USACE_CESPK_L06A_2011_a_0030_2.jpg

GPS Latitude/Longitude	
Start	End
37.251133 ° -120.774478 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on LS and WS. Sluice gate in gate well accessible from WS hinge.

USACE_CESPK_L06A_2011_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
37.251640 ° -120.778540 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on LS and WS. Sluice gate in gate well accessible from WS hinge.

USACE_CESPK_L06A_2011_a_0031_2.jpg

GPS Latitude/Longitude	
Start	End
37.251640 ° -120.778540 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Distribution box at WS hinge for hydraulic gates. "Rodney Hunt" sticker on box. Pipes thru levee according to LMA. Pipe were not visible due to high water. Pump station on LS outside of project boundary. No positive closure at WS hinge of crown.

USACE_CESPK_L06A_2011_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
37.251872 ° -120.779370 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Fence at LS toe & on LS slope.

USACE_CESPK_L06A_2011_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
37.251700 ° -120.778880 °	37.252860 ° -120.781270 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0034
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on WS and LS.

USACE_CESPK_L06A_2011_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
37.253490 ° -120.782490 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0034
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on WS and LS.

USACE_CESPK_L06A_2011_a_0034_2.jpg

GPS Latitude/Longitude	
Start	End
37.253490 ° -120.782490 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0036
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on WS and LS. Both sides submerged.

USACE_CESPK_L06A_2011_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
37.253812 ° -120.786067 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0037
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. WS submerged. Flap gate appears to be working,

USACE_CESPK_L06A_2011_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
37.253033 ° -120.790238 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0037
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. WS submerged. Flap gate appears to be working,

USACE_CESPK_L06A_2011_a_0037_2.jpg

GPS Latitude/Longitude	
Start	End
37.253033 ° -120.790238 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0038
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. Flap gate on WS.

USACE_CESPK_L06A_2011_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
37.252783 ° -120.793788 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. Flap gate on WS.

USACE_CESPK_L06A_2011_a_0038_2.jpg

GPS Latitude/Longitude	
Start	End
37.252783 ° -120.793788 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS near pipe headwall. Rodents physically present at this location.

USACE_CESPK_L06A_2011_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
37.252757 ° -120.793835 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Depressions on LS slope near hinge. Material slid down slope 6 feet long.

USACE_CESPK_L06A_2011_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
37.252768 ° -120.793915 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Depressions on LS slope near hinge. Material slid down slope 6 feet long.

USACE_CESPK_L06A_2011_a_0040_2.jpg

GPS Latitude/Longitude	
Start	End
37.252768 ° -120.793915 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Depressions on LS slope near hinge. Material slid down slope 6 feet long.

USACE_CESPK_L06A_2011_a_0040_3.jpg

GPS Latitude/Longitude	
Start	End
37.252768 ° -120.793915 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. Sluice gate in gate well accessible from WS hinge. No flap gate.

USACE_CESPK_L06A_2011_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
37.252968 ° -120.794330 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0041
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides. Sluice gate in gate well accessible from WS hinge. No flap gate.

USACE_CESPK_L06A_2011_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
37.252968 ° -120.794330 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0042
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Fence along LS levee toe. Approx. 5 to 6 feet from toe.

USACE_CESPK_L06A_2011_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
37.255070 ° -120.795480 °	37.259520 ° -120.803300 °

Rating[3]: M

LIS Issue Number[1]	0043
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes in LS slope. 9 + holes in this location. Diameters as wide as 9".

USACE_CESPK_L06A_2011_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
37.260463 ° -120.805240 °	0.000000 ° 0.000000 °

Rating[3]: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope. 1 hole was 4 feet deep, 5 inches wide. 9 + holes in this area.

USACE_CESPK_L06A_2011_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
37.260655 ° -120.805503 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence along LS of levee and up LS slope.

USACE_CESPK_L06A_2011_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
37.261530 ° -120.805840 °	37.266100 ° -120.808600 °
Rating³:	U

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Weeds longer than 12" on LS slope.

USACE_CESPK_L06A_2011_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
37.268795 ° -120.813805 °	0.000000 ° 0.000000 °
Rating³:	M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump in channel. Irrigation ditch perpendicular to levee on LS. Slide gate on WS slope. Power pole and guy wire on WS slope.

USACE_CESPK_L06A_2011_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
37.271465 ° -120.815858 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump in channel. Irrigation ditch perpendicular to levee on LS. Slide gate on WS slope. Power pole and guy wire on WS slope.

USACE_CESPK_L06A_2011_a_0048_2.jpg

GPS Latitude/Longitude	
Start	End
37.271465 ° -120.815858 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump in channel. Irrigation ditch perpendicular to levee on LS. Slide gate on WS slope. Power pole and guy wire on WS slope.

USACE_CESPK_L06A_2011_a_0048_3.jpg

GPS Latitude/Longitude	
Start	End
37.271465 ° -120.815858 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Deep Slough left bank below Mariposa Bypass (L06A)	Left	9.52	USACE	3/31/2011 4/6/2011	Ryan Larson

LIS Issue Number[1]	0049
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope.

USACE_CESPK_L06A_2011_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
37.271715 ° -120.816613 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0050
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trails on both slopes.

USACE_CESPK_L06A_2011_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
37.275790 ° -120.824170 °	37.275970 ° -120.825320 °

Rating[3]: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee/LSJLD-Units 1, 6, and 11

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: 3/31/2011 - 4/6/2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______   Date of ITR: ______

Final Approval By: ______   Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☑ **Minimally Acceptable**
☐ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**N/A**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	A	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	M	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	U	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	M	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

Index¹	Levee Mile Start	Levee Mile End	Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude Start	GPS Latitude/Longitude End	Issue No. ⁴ Photo ⁵
1			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate on WS slope. Headwall on LS. WS submerged. : Video inspect pipe thru levee.	37.202763 ° -120.747765 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.202732 ° -120.743450 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.202753 ° -120.739925 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.202748 ° -120.734813 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate in gate well on WS slope. WS submerged. : Video inspect pipe thru levee.	37.202745 ° -120.728172 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Unwanted Vegetation Growth		U	Grasses longer than 12" on slopes obscure visibility for inspection. : Cut or mow grass.	37.202730 ° -120.732170 °	37.202730 ° -120.724660 °	0006 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.202733 ° -120.719273 °	0.000000 ° 0.000000 °	0007 Y
8			Flood Damage Reduction Channels	Encroachments		M	Barbed wire fence across bypass. Debris caught on fence. Not a major obstruction to flow. : Remove debris and fence from project right of way.	37.202312 ° -120.706886 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Unwanted Vegetation Growth		M	Thistle on LS slope near toe obscures visibility for inspection. : Cut or mow weeds.	37.202790 ° -120.706560 °	37.202470 ° -120.700050 °	0009 Y
10			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working. : Video inspect pipe thru levee.	37.202480 ° -120.700273 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Encroachments		U	Cattle damage on slopes of levee. Trails and hoof prints along entire reach of levee. : Restore slopes.	37.202500 ° -120.754980 °	37.202420 ° -120.697010 °	0011 Y
12			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Tilting of LB wingwall on upstream side. Less than 2". : Monitor and repair if needed.	37.201107 ° -120.694691 °	0.000000 ° 0.000000 °	0012 Y
13			Flood Damage Reduction Channels	Concrete Surfaces		U	Cracking at joint. Rebar exposed. : Repair cracking.	37.201356 ° -120.694715 °	0.000000 ° 0.000000 °	0014 Y
14			Flood Damage Reduction Channels	Concrete Surfaces		M	Cracking at joint. : Monitor and repair.	37.201727 ° -120.694702 °	0.000000 ° 0.000000 °	0015 Y
15			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Holes at RB wall downstream of structure. Appears to be from settlement along wall : Repair holes and prevent future displacement of material.	37.201937 ° -120.694812 °	0.000000 ° 0.000000 °	0016 Y

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L011_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate on WS slope. Headwall on LS. WS submerged.

USACE_CESPK_L011_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.202763 ° -120.747765 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate on WS slope. Headwall on LS. WS submerged.

USACE_CESPK_L011_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.202763 ° -120.747765 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L011_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.202732 ° -120.743450 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L011_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.202753 ° -120.739925 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L011_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.202748 ° -120.734813 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate in gate well on WS slope. WS submerged.

USACE_CESPK_L011_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.202745 ° -120.728172 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate in gate well on WS slope. WS submerged.

USACE_CESPK_L011_2011_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
37.202745 ° -120.728172 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Grasses longer than 12" on slopes obscure visibility for inspection.

USACE_CESPK_L011_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.202730 ° -120.732170 °	37.202730 ° -120.724660 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L011_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.202733 ° -120.719273 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Barbed wire fence across bypass. Debris caught on fence. Not a major obstruction to flow.

USACE_CESPK_L011_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.202312 ° -120.706886 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Thistle on LS slope near toe obscures visibility for inspection.

USACE_CESPK_L011_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.202790 ° -120.706560 °	37.202470 ° -120.700050 °

Rating³: M

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. WS submerged. Flap gate appears to be working.

USACE_CESPK_L011_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.202480 ° -120.700273 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle damage on slopes of levee. Trails and hoof prints along entire reach of levee.

USACE_CESPK_L011_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.202500 ° -120.754980 °	37.202420 ° -120.697010 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle damage on slopes of levee. Trails and hoof prints along entire reach of levee.

USACE_CESPK_L011_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.202500 ° -120.754980 °	37.202420 ° -120.697010 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Remarks: Tilting of LB wingwall on upstream side. Less than 2".

USACE_CESPK_L011_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.201107 ° -120.694691 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 1, 6, and 11 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 11, Mariposa Bypass north levee (L011)		3.31	USACE	4/6/2011 4/6/2011	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Remarks: Cracking at joint. Rebar exposed.

USACE_CESPK_L011_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.201356 ° -120.694715 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Remarks: Cracking at joint.

USACE_CESPK_L011_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.201727 ° -120.694702 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Remarks: Holes at RB wall downstream of structure. Appears to be from settlement along wall

USACE_CESPK_L011_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.201937 ° -120.694812 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Operations and Readiness Branch

MAR 15 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between March 8th and 10th, 2011, inspectors Ryan Larson, Gene Vaughan, and Bob Murakami from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 3, 6, 18 - Eastside-Chowchilla Bypass system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 3 segments:

Segment Names
LSJLD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)
LSJLD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)
LSJLD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments and animal control. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, erosion/bank caving, and depressions/rutting (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channels portions of the system. Accumulated debris at bridge piers and fences in the floodway should be removed prior to the beginning of the flood season and after high flows. Ensure that the trash rack at the control structure at the upstream end of Unit 18 is installed.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to Madera County Office of Emergency Services, Merced County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

Will J. Leady

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee inspection reports with photos

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

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Based on observations made as part of the inspection, the LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments and animal control. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, erosion/bank caving, and depressions/rutting (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channels portions of the system. Accumulated debris at bridge piers and fences in the floodway should be removed prior to the beginning of the flood season and after high flows. Ensure that the trash rack at the control structure at the upstream end of Unit 18 is installed.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

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This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

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Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:
1) Report card
2) Map
3) Levee inspection reports with photos

CEI 3/10/2011 LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Faustino

Mahoney

Leady

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

SPK NLD

\\spk-netapp1\coopublic\fp&nav\icw\!_inspections_systemfolders\LSJLD-Units 3, 6, 18 - eastside-chowchilla bypass\2011 - CEI UI\CoverLetter_LSJLD-Units 3, 6, 18 – eastside-chowchilla bypass_1.docx

LSJLD-Units 3, 6, 18 – Eastside-Chowchilla Bypass
Unacceptable - Inactive

		LSJLD- U 3 San Joaquin R right bank abv Mariposa S	LSJLD- U 6 Eastside Byp left bank below Fresno R	LSJLD- U 18 Eastside Bypass left bnk abov Fresno R						
General	Operations and Maintenance Manuals	A	A	A						
	Emergency Supplies and Equipment	A	A	A						
	Flood Preparedness and Training	A	A	A						
Levee Embankments	Unwanted Vegetation Growth	A	M	🟨 U						
	Sod Cover	M	NA	NA						
	Encroachments	🟨 U	🟨 U	🟥 U						
	Closure Structures	NA	NA	NA						
	Slope Stability	A	A	A						
	Erosion/Bank Caving	A	🟨 U	A						
	Settlement	A	A	A						
	Depressions/Rutting	M	🟨 U	M						
	Cracking	A	A	A						
	Animal Control	🟥 U	🟥 U	🟥 U						
	Culverts/Discharge Pipes	NA	NA	NA						
	Riprap Revetments & Bank Protection	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA						
	Seepage	A	A	M						
Flood Damage Reduction Channels	Vegetation and Obstructions	A	M	🟨 U						
	Shoaling	A	M	A						
	Encroachments	A	🟨 U	A						
	Erosion	A	A	A						
	Concrete Surfaces	NA	M	M						
	Tilting, Sliding, or Settlement of Concrete	NA	M	NA						
	Foundation of Concrete Structures	NA	A	NA						
	Slab and Monolith Joints	NA	NA	NA						
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA						
	Riprap Revetments & Banks	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						

🟥 Likely Prevents Performance In Next Flood Event/Inactive

🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe

🟨 Not Likely to Prevent Performance In Next Flood Event/Active

The worst rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

11/20/2012

US Army Corps of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: March 8 - 10, 2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______   Date of ITR: ______

Final Approval By: ______   Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	A	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	M	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	NA	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	M	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Animal Control		U	Rodent holes on WS + LS of levee. Rodents physically present on levee. Approx 3" diameter holes. : Control rodents & fill holes.	37.089102 ° -120.566985 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Pipe and pump on WS. Pumps to pool on WS of levee. Conduit thru levee. Positive closure on WS hinge. Erosion of LS slope. Irrigation "pond" on LS of levee. Power pole and guy wire at WS toe. : Check permit status. Repair erosion on LS of Levee. Monitor erosion on WS slope. Near pool.	37.089410 ° -120.567728 °	0.000000 ° 0.000000 °	0003 Y
3			Levee Embankments	Animal Control		U	Rodent holes on WS and LS slopes. Some as deep as 3 feet and 5 feet into the levee. : Control rodents and fill holes.	37.089497 ° -120.568063 °	0.000000 ° 0.000000 °	0004 Y
4			Levee Embankments	Encroachments		U	Culvert thru levee. Gravity drainage. CMP, flap gate on WS. : Video inspect culvert.	37.092080 ° -120.572203 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Depressions/ Rutting		M	Rutting on LS hinge less than 6". : Repair ruts.	37.098392 ° -120.576936 °	0.000000 ° 0.000000 °	0006 Y
6			Levee Embankments	Sod Cover		M	Erosion from surface runoff 5" deep on LS slope. : Repair slope.	37.098477 ° -120.576975 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Depressions/ Rutting		M	Vehicle rutting on LS slope. : Repair slope.	37.101648 ° -120.580052 °	0.000000 ° 0.000000 °	0008 Y
8			Levee Embankments	Encroachments		U	Culvert thru levee, flap gate on WS. CMP gravity drainage. : Video inspect culvert.	37.102962 ° -120.581403 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Encroachments		M	LS toe cut, 7" deep 10 feet long. : Restore toe.	37.103572 ° -120.582915 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Depressions/ Rutting		M	Vehicle rutting of LS slope. : Repair slope.	37.105615 ° -120.585148 °	0.000000 ° 0.000000 °	0011
11			Levee Embankments	Encroachments		U	Culvert thru levee. Flap gate on WS. for gravity drainage. 70% blocked by sediment on LS. : Video inspect culvert.	37.106243 ° -120.585747 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Animal Control		U	Rodent activity on both WS & LS slopes. : Control rodents and fill holes.	37.110053 ° -120.587760 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Animal Control		U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0014

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L003_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS + LS of levee. Rodents physically present on levee. Approx 3" diameter holes.

USACE_CESPK_L003_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.089102 ° -120.566985 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS + LS of levee. Rodents physically present on levee. Approx 3" diameter holes.

USACE_CESPK_L003_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.089102 ° -120.566985 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS + LS of levee. Rodents physically present on levee. Approx 3" diameter holes.

USACE_CESPK_L003_2011_a_0001_3.jpg

GPS Latitude/Longitude	
Start	End
37.089102 ° -120.566985 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number[1]	0003
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe and pump on WS. Pumps to pool on WS of levee. Conduit thru levee. Positive closure on WS hinge. Erosion of LS slope. Irrigation "pond" on LS of levee. Power pole and guy wire at WS toe.

USACE_CESPK_L003_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.089410 ° -120.567728 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0003
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe and pump on WS. Pumps to pool on WS of levee. Conduit thru levee. Positive closure on WS hinge. Erosion of LS slope. Irrigation "pond" on LS of levee. Power pole and guy wire at WS toe.

USACE_CESPK_L003_2011_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
37.089410 ° -120.567728 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0003
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe and pump on WS. Pumps to pool on WS of levee. Conduit thru levee. Positive closure on WS hinge. Erosion of LS slope. Irrigation "pond" on LS of levee. Power pole and guy wire at WS toe.

USACE_CESPK_L003_2011_a_0003_3.jpg

GPS Latitude/Longitude	
Start	End
37.089410 ° -120.567728 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe and pump on WS. Pumps to pool on WS of levee. Conduit thru levee. Positive closure on WS hinge. Erosion of LS slope. Irrigation "pond" on LS of levee. Power pole and guy wire at WS toe.

USACE_CESPK_L003_2011_a_0003_4.jpg

GPS Latitude/Longitude	
Start	End
37.089410 ° -120.567728 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS and LS slopes. Some as deep as 3 feet and 5 feet into the levee.

USACE_CESPK_L003_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.089497 ° -120.568063 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS and LS slopes. Some as deep as 3 feet and 5 feet into the levee.

USACE_CESPK_L003_2011_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.089497 ° -120.568063 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Gravity drainage. CMP, flap gate on WS.

USACE_CESPK_L003_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.092080 ° -120.572203 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Gravity drainage. CMP, flap gate on WS.

USACE_CESPK_L003_2011_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
37.092080 ° -120.572203 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on LS hinge less than 6".

USACE_CESPK_L003_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.098392 ° -120.576936 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Remarks: Erosion from surface runoff 5" deep on LS slope.

USACE_CESPK_L003_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.098477 ° -120.576975 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Remarks: Erosion from surface runoff 5" deep on LS slope.

USACE_CESPK_L003_2011_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.098477 ° -120.576975 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Vehicle rutting on LS slope.

USACE_CESPK_L003_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.101648 ° -120.580052 °	0.000000 ° 0.000000 °

Rating³: M

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee, flap gate on WS. CMP gravity drainage.

USACE_CESPK_L003_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.102962 °	0.000000 °
-120.581403 °	0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee, flap gate on WS. CMP gravity drainage.

USACE_CESPK_L003_2011_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
37.102962 °	0.000000 °
-120.581403 °	0.000000 °

Rating³: U

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: LS toe cut, 7" deep 10 feet long.

USACE_CESPK_L003_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.103572 °	0.000000 °
-120.582915 °	0.000000 °

Rating³: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 3, San Joaquin River right bank above Mariposa Slough-Eastside Bypass (L003)	Right	2.09	USACE	3/8/2011 3/8/2011	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Flap gate on WS. for gravity drainage. 70% blocked by sediment on LS.

USACE_CESPK_L003_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.106243 ° -120.585747 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Flap gate on WS. for gravity drainage. 70% blocked by sediment on LS.

USACE_CESPK_L003_2011_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.106243 ° -120.585747 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent activity on both WS & LS slopes.

USACE_CESPK_L003_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.110053 ° -120.587760 °	0.000000 ° 0.000000 °
Rating³: U	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: March 8 - 10, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared: ____

Internal Technical Review (for Periodic Inspections) By: ____

Date of ITR: ____

Final Approval By: ____

Date Approved: ____

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	M	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	NA	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	NA	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	**N/A**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**M**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**M**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	**M**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	**M**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	**A**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	NA	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	NA	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	NA	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	NA	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Erosion/ Bank Caving		M	Erosion of LS slope 1 foot deep. : Restore slope.	37.113248 ° -120.586142 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Power poles at LS toe. : Check permit status.	37.113210 ° -120.586040 °	37.113220 ° -120.580520 °	0002 Y
3			Levee Embankments	Encroachments		M	Barbed wire fence 3 feet beyond WS toe. : Confirm permit status.	37.113380 ° -120.586100 °	37.113400 ° -120.581270 °	0003 Y
4			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Sediment disposal area on WS of levee. : Confirm no impact to channel capacity.	37.113738 ° -120.584855 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		U	Power poles at LS toe. : Confirm permit status.	37.113240 ° -120.580670 °	37.113140 ° -120.564300 °	0005 Y
6			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Barbed wire fence perpendicular to flow under bridge. Debris caught in fence. : Clear debris. Confirm permit status.	37.113045 ° -120.563620 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Erosion/ Bank Caving		U	Erosion of LS slope. Varies from 17" to 11" deep approx 600 feet long. : Restore slope.	37.112700 ° -120.563057 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Unwanted Vegetation Growth		A	Good vegetation management. : Continue good work.	37.104897 ° -120.555203 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Erosion/ Bank Caving		M	Erosion of LS slope. 9" deep. : Restore slopes.	37.102780 ° -120.553080 °	37.101830 ° -120.552110 °	0009 Y
10			Levee Embankments	Encroachments		M	Hose thru levee. Tank on WS. Tank full of water. No positive closure. : Confirm permit status.	37.098800 ° -120.549077 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Encroachments		M	Barbed wire fence at LS toe. Fence is supposed to be at property line. : Confirm location of fence.	37.112820 ° -120.563600 °	37.099610 ° -120.550230 °	0011 Y
12			Levee Embankments	Erosion/ Bank Caving		M	Erosion of LS slope less than 1 foot deep. : Restore slope.	37.098567 ° -120.548800 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Encroachments		U	Pipe thru levee. Channel cut on WS to get water to pump. Siphon breaker at LS hinge. : Confirm permit status. Video inspect pipe thru levee.	37.089422 ° -120.538973 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments		A	Cattle on LS of levee and on crown, grazing. : NA	37.093425 ° -120.543544 °	0.000000 ° 0.000000 °	0014
15			Levee Embankments	Erosion/ Bank Caving		M	Erosion on LS slope. Less than 1 foot deep. : Restore slope.	37.085487 ° -120.534720 °	0.000000 ° 0.000000 °	0015 Y
16			Levee Embankments	Encroachments		M	Guy wire at WS toe. Power line over crown. : Confirm permit status or move guy wire.	37.082063 ° -120.530947 °	0.000000 ° 0.000000 °	0016 Y
17			Levee Embankments	Encroachments		U	Pipe thru levee. Channel cut on bank to get water to pump. Siphon breaker at LS hinge. Pump missing. Pipe abandoned. Pipe welded closed on WS. Unknown if grouted. : Video inspect pipe thru levee or confirm abandonment procedure.	37.077437 ° -120.525995 °	0.000000 ° 0.000000 °	0017 Y
18			Levee Embankments	Encroachments		M	Barbed wire fence at LS toe. At project boundary. : Confirm fence location is at project boundary.	37.098310 ° -120.548930 °	37.072190 ° -120.520710 °	0018
19			Levee Embankments	Encroachments		M	Barbed wire fence across channel under Hwy 152. : Remove fence and debris.	37.073425 ° -120.519876 °	0.000000 ° 0.000000 °	0019 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06C_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
20			Levee Embankments	Erosion/ Bank Caving		M	Small rills on LS slope. Slope is approx 2:1 on LS. Erosion is along entire slope. Crown width is 10 feet. Slope is uniform. : Monitor slope for erosion.	37.070880 ° -120.519100 °	37.067530 ° -120.515480 °	0020 Y
21			Levee Embankments	Erosion/ Bank Caving		M	Erosion of WS slope approx. 5" deep. : Restore slope.	37.070433 ° -120.518433 °	0.000000 ° 0.000000 °	0021 Y
22			Levee Embankments	Erosion/ Bank Caving		U	Erosion of LS slope. Approx 1 ft of material missing on LS slope. Current slope is 1.5:1. : Restore slope to design lines and grade.	37.069050 ° -120.516878 °	0.000000 ° 0.000000 °	0022 Y
23			Levee Embankments	Animal Control		U	Rodent activity on both slopes. Near LS hinge where erosion is a problem. : Control rodents.	37.069097 ° -120.516910 °	0.000000 ° 0.000000 °	0023 Y
24			Levee Embankments	Encroachments		M	Trough on WS of levee. Plastic hose on slopes used to fill trough. Hose does not penetrate levee. : Ensure no erosion from hose operation.	37.067372 ° -120.515077 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Depressions/ Rutting		U	Depressions in crown 6" deep, that will pond water. : Fill holes across crown.	37.061210 ° -120.508437 °	0.000000 ° 0.000000 °	0026 Y
26			Levee Embankments	Animal Control		U	8 inch deep rodent hole on WS hinge. Rodent activity down WS & LS slopes. : Control rodents. Fill holes.	37.060852 ° -120.507978 °	0.000000 ° 0.000000 °	0027 Y
27			Levee Embankments	Animal Control		M	Rodent holes on LS slope. In crown. : Control rodents and fill holes.	37.058457 ° -120.505467 °	0.000000 ° 0.000000 °	0028 Y
28			Levee Embankments	Unwanted Vegetation Growth		A	Good looking levee. Slopes 3:1 and 2:1 and 12 foot crown. Vegetation shorter than 12". : Maintain.	37.067180 ° -120.515060 °	37.058490 ° -120.505950 °	0029 Y
29			Levee Embankments	Erosion/ Bank Caving		M	Erosion near fence from cattle. Approx 11 inches deep. : Repair erosion.	37.054173 ° -120.500805 °	0.000000 ° 0.000000 °	0030 Y
30			Flood Damage Reduction Channels	Vegetation and Obstructions		U	Debris collecting along piers of bridge. : Clear debris.	37.054665 ° -120.499580 °	0.000000 ° 0.000000 °	0031 Y
31			Flood Damage Reduction Channels	Encroachments		U	Riprap drop structure under Ave 21. Riprap across channel. : Confirm status of bridge and drop structure.	37.054474 ° -120.498873 °	0.000000 ° 0.000000 °	0032 Y
32			Levee Embankments	Encroachments		M	Cattle grazing WS berm and levee. : NA	37.048275 ° -120.493498 °	0.000000 ° 0.000000 °	0033
33			Levee Embankments	Erosion/ Bank Caving		M	Erosion of LS slope and WS slopes. Appears to be from cattle. 8 inches deep at worst. : Restore slopes.	37.039920 ° -120.486870 °	37.033950 ° -120.482260 °	0034 Y
34			Levee Embankments	Erosion/ Bank Caving		M	Erosion of LS slope. Less than 6" deep. : Restore slope.	37.036555 ° -120.484143 °	0.000000 ° 0.000000 °	0035 Y
35			Levee Embankments	Animal Control		M	Rodent role at WS hinge and crown. : Control rodents and fill holes.	37.030020 ° -120.475185 °	0.000000 ° 0.000000 °	0036 Y
36			Levee Embankments	Erosion/ Bank Caving		M	Erosion of WS and LS slopes from cattle grazing. : Restore slopes to design lines and grade.	37.030890 ° -120.478630 °	37.030000 ° -120.473950 °	0037
37			Flood Damage Reduction Channels	Encroachments		U	Barbed wire fence perpendicular to flow under bridge. Fence attached to downstream piers. Riprap drop structure under bridge. : Consider attaching to U/S piers. So debris does not collect under bridge and can be cleaned out. Confirm design flow can move under bridge with fence and drop structure	37.030835 ° -120.473550 °	0.000000 ° 0.000000 °	0038 Y

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² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06C_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
38			Levee Embankments	Depressions/ Rutting		M	Depressions in crown. 5" deep. : Repair crown.	37.029942 ° -120.471662 °	0.000000 ° 0.000000 °	0039 Y
39			Levee Embankments	Encroachments		U	CMP thru levee. Slide gate on WS slope. No flap gate. Erosion around riser. : Video inspect pipe.	37.030323 ° -120.456070 °	0.000000 ° 0.000000 °	0040 Y
40			Flood Damage Reduction Channels	Encroachments		U	Concrete pipe across channel. Pipe acts as weir. Erosion of LB, downstream of pipe. Erosion not a threat to levee. Concrete rubble downstream of pipe with rebar exposed. : Monitor erosion of LB. Remove rebar.	37.027647 ° -120.440635 °	0.000000 ° 0.000000 °	0041 Y
41			Levee Embankments	Encroachments		U	Pipe thru levee. No positive closure on WS of levee. Closure on LS of Levee. Concrete pipe exposed in channel. Connected to point 41. : Need positive closure on WS of levee. Confirm status of pipe. Video inspect pipe thru levee.	37.027310 ° -120.441517 °	0.000000 ° 0.000000 °	0042 Y
42			Levee Embankments	Erosion/ Bank Caving		U	Erosion of LS slope. As deep as 12 inches. : Restore slope.	37.021010 ° -120.437210 °	37.018290 ° -120.435360 °	0043 Y
43			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Debris under bridge. : Remove debris.	37.017997 ° -120.433580 °	0.000000 ° 0.000000 °	0045 Y
44			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. Small diameter rodents holes. : Control rodents and fill holes.	37.012762 ° -120.431528 °	0.000000 ° 0.000000 °	0046 Y
45			Levee Embankments	Erosion/ Bank Caving		U	Erosion of LS slope, along entire slope to hinge. Crown 9 feet wide. More than 1 foot of material missing from slope. : Restore levee to design lines and grade.	37.012370 ° -120.431310 °	37.010690 ° -120.430330 °	0047 Y
46			Levee Embankments	Animal Control		U	Rodent holes on both sides of levee. 7 inch diameter holes at LS toe. Smaller holes on WS slope. : Control rodents and fill holes.	37.008120 ° -120.427582 °	0.000000 ° 0.000000 °	0048 Y
47			Levee Embankments	Animal Control		U	Rodent holes on both sides of levee. Worst on LS. 8-9 holes in this area, 4 inch dia. 2 feet deep. : Control rodents and fill holes.	37.007105 ° -120.426313 °	0.000000 ° 0.000000 °	0049 Y
48			Levee Embankments	Erosion/ Bank Caving		U	Erosion on LS and WS slopes. More than 1 ft of material missing. Crown 9 feet wide in parts. Worst on LS. Some on WS. : Restore slopes to design lines and grade	37.001070 ° -120.418960 °	36.997560 ° -120.415090 °	0050 Y
49			Levee Embankments	Encroachments		U	Pipe thru levee. Slant pipe on WS. No siphon breaker or positive closure on WS hinge. : Video inspect pipe thru levee or pressure test.	36.995713 ° -120.413007 °	0.000000 ° 0.000000 °	0051 Y
50			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slopes. : Fill holes and control rodents.	36.981252 ° -120.396952 °	0.000000 ° 0.000000 °	0052 Y
51			Levee Embankments	Animal Control		U	Rodent holes on LS & WS. : Control rodents and fill holes	36.976797 ° -120.392000 °	0.000000 ° 0.000000 °	0053 Y
52			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Downstream joint of weir separated. Daylight visible thru joint at top of wall. : Monitor joint movement. Seal joint.	36.975268 ° -120.382097 °	0.000000 ° 0.000000 °	0054 Y
53			Flood Damage Reduction Channels	Concrete Surfaces		M	Spalling of LB wall. : Repair spalling.	36.975333 ° -120.382163 °	0.000000 ° 0.000000 °	0055 Y
54			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Joint separation at upstream joint. 1 inch of lateral separation. : Monitor joint. Seal joint.	36.975317 ° -120.382105 °	0.000000 ° 0.000000 °	0056 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06C_2011_a_####.

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US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
55			Levee Embankments	Encroachments		U	Culvert thru levee. Slide gate at WS hinge. Gravity line thru levee for irrigation. : Video inspect culvert thru levee.	36.974512 ° -120.382005 °	0.000000 ° 0.000000 °	0057 Y
56			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Joint separation at weir. : Monitor joint for movement. Protect water stop.	36.975490 ° -120.374842 °	0.000000 ° 0.000000 °	0058 Y
57			Flood Damage Reduction Channels	Concrete Surfaces		A	Weir across channel in good condition. : NA	36.975412 ° -120.374838 °	0.000000 ° 0.000000 °	0059 Y
58			Levee Embankments	Unwanted Vegetation Growth		M	Grass longer than 12" on LS slopes. Obscures views for inspection. : Cut grass.	36.974160 ° -120.374650 °	36.974340 ° -120.364190 °	0061 Y
59			Levee Embankments	Animal Control		M	Rodent holes on WS of levee. Near WS hinge. : Control rodents and fill holes.	36.974402 ° -120.365203 °	0.000000 ° 0.000000 °	0062 Y
60			Levee Embankments	Animal Control		U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0063

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L06C_2011_a_####.

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US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope 1 foot deep.

USACE_CESPK_L06C_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.113248 ° -120.586142 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Power poles at LS toe.

USACE_CESPK_L06C_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.113210 ° -120.586040 °	37.113220 ° -120.580520 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence 3 feet beyond WS toe.

USACE_CESPK_L06C_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.113380 ° -120.586100 °	37.113400 ° -120.581270 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Sediment disposal area on WS of levee.

USACE_CESPK_L06C_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.113738 ° -120.584855 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Power poles at LS toe.

USACE_CESPK_L06C_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.113240 ° -120.580670 °	37.113140 ° -120.564300 °

Rating³: U

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Barbed wire fence perpendicular to flow under bridge. Debris caught in fence.

USACE_CESPK_L06C_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.113045 ° -120.563620 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving
Remarks: Erosion of LS slope. Varies from 17" to 11" deep approx 600 feet long.	

USACE_CESPK_L06C_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.112700 ° -120.563057 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Remarks: Good vegetation management.	

USACE_CESPK_L06C_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.104897 ° -120.555203 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving
Remarks: Erosion of LS slope. 9" deep.	

USACE_CESPK_L06C_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.102780 ° -120.553080 °	37.101830 ° -120.552110 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Hose thru levee. Tank on WS. Tank full of water. No positive closure.

USACE_CESPK_L06C_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.098800 ° -120.549077 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence at LS toe. Fence is supposed to be at property line.

USACE_CESPK_L06C_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.112820 ° -120.563600 °	37.099610 ° -120.550230 °

Rating³: M

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope less than 1 foot deep.

USACE_CESPK_L06C_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.098567 ° -120.548800 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0013
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Channel cut on WS to get water to pump. Siphon breaker at LS hinge.

USACE_CESPK_L06C_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.089422 ° -120.538973 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0013
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Channel cut on WS to get water to pump. Siphon breaker at LS hinge.

USACE_CESPK_L06C_2011_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
37.089422 ° -120.538973 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0015
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion on LS slope. Less than 1 foot deep.

USACE_CESPK_L06C_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.085487 ° -120.534720 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Guy wire at WS toe. Power line over crown.

USACE_CESPK_L06C_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.082063 ° -120.530947 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Channel cut on bank to get water to pump. Siphon breaker at LS hinge. Pump missing. Pipe abandoned. Pipe welded closed on WS. Unknown if grouted.

USACE_CESPK_L06C_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.077437 ° -120.525995 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Channel cut on bank to get water to pump. Siphon breaker at LS hinge. Pump missing. Pipe abandoned. Pipe welded closed on WS. Unknown if grouted.

USACE_CESPK_L06C_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.077437 ° -120.525995 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Channel cut on bank to get water to pump. Siphon breaker at LS hinge. Pump missing. Pipe abandoned. Pipe welded closed on WS. Unknown if grouted.

USACE_CESPK_L06C_2011_a_0017_3.jpg

GPS Latitude/Longitude	
Start	End
37.077437 ° -120.525995 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence across channel under Hwy 152.

USACE_CESPK_L06C_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.073425 ° -120.519876 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Small rills on LS slope. Slope is approx 2:1 on LS. Erosion is along entire slope. Crown width is 10 feet. Slope is uniform.

USACE_CESPK_L06C_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.070880 ° -120.519100 °	37.067530 ° -120.515480 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Small rills on LS slope. Slope is approx 2:1 on LS. Erosion is along entire slope. Crown width is 10 feet. Slope is uniform.

USACE_CESPK_L06C_2011_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
37.070880 ° -120.519100 °	37.067530 ° -120.515480 °
Rating³:	M

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Small rills on LS slope. Slope is approx 2:1 on LS. Erosion is along entire slope. Crown width is 10 feet. Slope is uniform.

USACE_CESPK_L06C_2011_a_0020_3.jpg

GPS Latitude/Longitude	
Start	End
37.070880 ° -120.519100 °	37.067530 ° -120.515480 °
Rating³:	M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope approx. 5" deep.

USACE_CESPK_L06C_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.070433 ° -120.518433 °	0.000000 ° 0.000000 °
Rating³:	M

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0022
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope. Approx 1 ft of material missing on LS slope. Current slope is 1.5:1.

USACE_CESPK_L06C_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.069050 ° -120.516878 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0023
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent activity on both slopes. Near LS hinge where erosion is a problem.

USACE_CESPK_L06C_2011_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.069097 ° -120.516910 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0024
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Trough on WS of levee. Plastic hose on slopes used to fill trough. Hose does not penetrate levee.

USACE_CESPK_L06C_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.067372 ° -120.515077 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0026
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Depressions in crown 6" deep, that will pond water.

USACE_CESPK_L06C_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.061210 ° -120.508437 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0027
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: 8 inch deep rodent hole on WS hinge. Rodent activity down WS & LS slopes.

USACE_CESPK_L06C_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.060852 ° -120.507978 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0028
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope. In crown.

USACE_CESPK_L06C_2011_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
37.058457 ° -120.505467 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Good looking levee. Slopes 3:1 and 2:1 and 12 foot crown. Vegetation shorter than 12".

USACE_CESPK_L06C_2011_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.067180 ° -120.515060 °	37.058490 ° -120.505950 °
Rating³:	A

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion near fence from cattle. Approx 11 inches deep.

USACE_CESPK_L06C_2011_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
37.054173 ° -120.500805 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Debris collecting along piers of bridge.

USACE_CESPK_L06C_2011_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
37.054665 ° -120.499580 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0031
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Debris collecting along piers of bridge.

USACE_CESPK_L06C_2011_a_0031_2.jpg

GPS Latitude/Longitude	
Start	End
37.054665 ° -120.499580 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0032
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Riprap drop structure under Ave 21. Riprap across channel.

USACE_CESPK_L06C_2011_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
37.054474 ° -120.498873 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0034
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope and WS slopes. Appears to be from cattle. 8 inches deep at worst.

USACE_CESPK_L06C_2011_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
37.039920 ° -120.486870 °	37.033950 ° -120.482260 °

Rating[3]: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0034
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope and WS slopes. Appears to be from cattle. 8 inches deep at worst.

USACE_CESPK_L06C_2011_a_0034_2.jpg

GPS Latitude/Longitude	
Start	End
37.039920 ° -120.486870 °	37.033950 ° -120.482260 °

Rating[3]: M

LIS Issue Number[1]	0035
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope. Less than 6" deep.

USACE_CESPK_L06C_2011_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
37.036555 ° -120.484143 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0036
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent role at WS hinge and crown.

USACE_CESPK_L06C_2011_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
37.030020 ° -120.475185 °	0.000000 ° 0.000000 °

Rating[3]: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Barbed wire fence perpendicular to flow under bridge. Fence attached to downstream piers. Riprap drop structure under bridge.

USACE_CESPK_L06C_2011_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
37.030835 ° -120.473550 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Barbed wire fence perpendicular to flow under bridge. Fence attached to downstream piers. Riprap drop structure under bridge.

USACE_CESPK_L06C_2011_a_0038_2.jpg

GPS Latitude/Longitude	
Start	End
37.030835 ° -120.473550 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Depressions in crown. 5" deep.

USACE_CESPK_L06C_2011_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
37.029942 ° -120.471662 °	0.000000 ° 0.000000 °
Rating³: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0040
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: CMP thru levee. Slide gate on WS slope. No flap gate. Erosion around riser.

USACE_CESPK_L06C_2011_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
37.030323 ° -120.456070 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0041
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Concrete pipe across channel. Pipe acts as weir. Erosion of LB, downstream of pipe. Erosion not a threat to levee. Concrete rubble downstream of pipe with rebar exposed.

USACE_CESPK_L06C_2011_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
37.027647 ° -120.440635 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0041
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Concrete pipe across channel. Pipe acts as weir. Erosion of LB, downstream of pipe. Erosion not a threat to levee. Concrete rubble downstream of pipe with rebar exposed.

USACE_CESPK_L06C_2011_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
37.027647 ° -120.440635 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0042
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. No positive closure on WS of levee. Closure on LS of Levee. Concrete pipe exposed in channel. Connected to point 41.

USACE_CESPK_L06C_2011_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
37.027310 ° -120.441517 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0043
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope. As deep as 12 inches.

USACE_CESPK_L06C_2011_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
37.021010 ° -120.437210 °	37.018290 ° -120.435360 °
Rating[3]: U	

LIS Issue Number[1]	0045
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Debris under bridge.

USACE_CESPK_L06C_2011_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
37.017997 ° -120.433580 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee. Small diameter rodents holes.

USACE_CESPK_L06C_2011_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
37.012762 ° -120.431528 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of LS slope, along entire slope to hinge. Crown 9 feet wide. More than 1 foot of material missing from slope.

USACE_CESPK_L06C_2011_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
37.012370 ° -120.431310 °	37.010690 ° -120.430330 °
Rating³: U	

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of levee. 7 inch diameter holes at LS toe. Smaller holes on WS slope.

USACE_CESPK_L06C_2011_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
37.008120 ° -120.427582 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0049
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of levee. Worst on LS. 8-9 holes in this area, 4 inch dia. 2 feet deep.

USACE_CESPK_L06C_2011_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
37.007105 ° -120.426313 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0050
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion on LS and WS slopes. More than 1 ft of material missing. Crown 9 feet wide in parts. Worst on LS. Some on WS.

USACE_CESPK_L06C_2011_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
37.001070 ° -120.418960 °	36.997560 ° -120.415090 °
Rating[3]: U	

LIS Issue Number[1]	0051
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slant pipe on WS. No siphon breaker or positive closure on WS hinge.

USACE_CESPK_L06C_2011_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
36.995713 ° -120.413007 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number[1]	0051
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slant pipe on WS. No siphon breaker or positive closure on WS hinge.

USACE_CESPK_L06C_2011_a_0051_2.jpg

GPS Latitude/Longitude	
Start	End
36.995713 ° -120.413007 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0052
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes.

USACE_CESPK_L06C_2011_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
36.981252 ° -120.396952 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0053
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS & WS.

USACE_CESPK_L06C_2011_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
36.976797 ° -120.392000 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS & WS.

USACE_CESPK_L06C_2011_a_0053_2.jpg

GPS Latitude/Longitude	
Start	End
36.976797 ° -120.392000 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Remarks: Downstream joint of weir separated. Daylight visible thru joint at top of wall.

USACE_CESPK_L06C_2011_a_0054_1.jpg

GPS Latitude/Longitude	
Start	End
36.975268 ° -120.382097 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Remarks: Spalling of LB wall.

USACE_CESPK_L06C_2011_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
36.975333 ° -120.382163 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Remarks: Spalling of LB wall.

USACE_CESPK_L06C_2011_a_0055_2.jpg

GPS Latitude/Longitude	
Start	End
36.975333 ° -120.382163 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Remarks: Joint separation at upstream joint. 1 inch of lateral separation.

USACE_CESPK_L06C_2011_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
36.975317 ° -120.382105 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Slide gate at WS hinge. Gravity line thru levee for irrigation.

USACE_CESPK_L06C_2011_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
36.974512 ° -120.382005 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Culvert thru levee. Slide gate at WS hinge. Gravity line thru levee for irrigation.

USACE_CESPK_L06C_2011_a_0057_2.jpg

GPS Latitude/Longitude	
Start	End
36.974512 ° -120.382005 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Remarks: Joint separation at weir.

USACE_CESPK_L06C_2011_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
36.975490 ° -120.374842 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Remarks: Weir across channel in good condition.

USACE_CESPK_L06C_2011_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
36.975412 ° -120.374838 °	0.000000 ° 0.000000 °

Rating³: A

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 6, Eastside Bypass left bank below Fresno River (L06C)	Left	17.05	USACE	3/8/2011 3/9/2011	Ryan Larson

LIS Issue Number¹	0061
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Grass longer than 12" on LS slopes. Obscures views for inspection.

USACE_CESPK_L06C_2011_a_0061_1.jpg

GPS Latitude/Longitude	
Start	End
36.974160 ° -120.374650 °	36.974340 ° -120.364190 °

Rating³: M

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS of levee. Near WS hinge.

USACE_CESPK_L06C_2011_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
36.974402 ° -120.365203 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: March 8 - 10, 2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______   Date of ITR: ______

Final Approval By: ______   Date Approved: ______

Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:
- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**NA**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**NA**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	M	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	M	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	U	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	M	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	NA	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	NA	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	NA	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	NA	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	NA	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	NA	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Unwanted Vegetation Growth		M	Grass on LS slope obscures visibility for inspection, longer than 12 inches. No trees in this reach. : Mow grass.	36.974270 ° -120.363510 °	36.958420 ° -120.355120 °	0001 Y
2			Levee Embankments	Animal Control		U	2 1/2 foot diameter hole on LS slope. Rodent activity on WS. : Control rodents and fill holes.	36.956168 ° -120.353700 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		M	Cuttings, barrels, fencing on LS toe. : Remove from project right of way.	36.955212 ° -120.353078 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		U	Pipe thru levee. Standpipe on WS beyond WS toe. Appears abandoned. No WS positive closure. : Confirm permit status or if abandoned. Video inspect pipe thru levee or pressure test.	36.952895 ° -120.351503 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		M	Power line crosses crown. : line appears low for O & M equipment.	36.952408 ° -120.351535 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Animal Control		U	Rodent holes on both sides. Large holes on LS, at least 5 feet deep into levee. : Fill holes and control rodents.	36.948587 ° -120.349028 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Pump on WS. Standpipe beyond WS toe. Conduit to channel with trash rack. No flap gate or WS positive closure. : Confirm permit status. Ensure WS positive closure. Video inspect pipe thru levee.	36.945573 ° -120.347145 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slopes. Hole 2 feet deep on LS. : Fill holes and control rodents.	36.937680 ° -120.344310 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slopes. Extends for 30 feet along levee. : Control rodents and fill holes.	36.928663 ° -120.340772 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Unwanted Vegetation Growth		M	Grass longer than 12" on LS slope. Tumbleweed on LS slope obscures slope and toe. : Remove tumbleweed and mow grass.	36.927710 ° -120.340630 °	36.916540 ° -120.336300 °	0010 Y
11			Levee Embankments	Depressions/ Rutting		M	Water ponding at LS toe. : Grade area so water moves away from levee.	36.909922 ° -120.333927 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Animal Control		M	Rodent holes on LS slope. At least 23 holes in 60 feet. Some as deep as 3 feet into the levee. : Control rodents and fill holes.	36.895203 ° -120.327647 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Animal Control		U	Rodent holes at LS toe as deep as 3 feet. : Control rodents and fill holes.	36.881193 ° -120.321222 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments		U	Pipe thru levee. No flap gate at WS. Gate well and slide gate at WS hinge. CMP gravity line for irrigation. : Video inspect pipe thru levee.	36.872482 ° -120.319100 °	0.000000 ° 0.000000 °	0014 Y
15			Levee Embankments	Animal Control		M	Rodent holes at LS toe. : Control rodents and fill holes.	36.860652 ° -120.317117 °	0.000000 ° 0.000000 °	0015 Y
16			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. : Control rodents and fill holes.	36.848796 ° -120.316199 °	0.000000 ° 0.000000 °	0016 Y
17			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. : Control rodents and fill holes.	36.848854 ° -120.316342 °	0.000000 ° 0.000000 °	0017 Y
18			Levee Embankments	Animal Control		M	Rodent holes on WS slope. 1-2 inch dia holes. : Control rodents and fill holes.	36.845115 ° -120.316122 °	0.000000 ° 0.000000 °	0018 Y
19			Levee Embankments	Animal Control		U	Rodent holes on LS and WS of levee. Worst on LS. Numerous small dia holes. : Control rodents and fill holes.	36.842518 ° -120.315508 °	0.000000 ° 0.000000 °	0019 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L018_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
20			Levee Embankments	Unwanted Vegetation Growth		M	Tumbleweed on LS and WS slopes obscures visibility of slopes. : Remove tumbleweed.	36.850300 ° -120.316400 °	36.836550 ° -120.308180 °	0020 Y
21			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. : Control rodents and fill holes.	36.834763 ° -120.305968 °	0.000000 ° 0.000000 °	0021 Y
22			Levee Embankments	Animal Control		U	Small diameter holes on both sides of levee 1-2 inches in dia. : Control rodents and fill holes.	36.831795 ° -120.302325 °	0.000000 ° 0.000000 °	0022 Y
23			Levee Embankments	Seepage		M	Rapid deployment flood wall (RDFW) landside of levee outside of project right of way. Possible seepage location? : Identity if seepage location and repair.	36.827869 ° -120.300428 °	0.000000 ° 0.000000 °	0023 Y
24			Levee Embankments	Depressions/ Rutting		M	Hole in crown that will pond water. Less than 6 inches deep. : Repair hole.	36.827320 ° -120.300237 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. Small diameter holes. : Control Rodents and fill holes.	36.824740 ° -120.301215 °	0.000000 ° 0.000000 °	0025 Y
26			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Train car chassis in channel bottom. : Remove train car.	36.821927 ° -120.300805 °	0.000000 ° 0.000000 °	0026 Y
27			Levee Embankments	Unwanted Vegetation Growth		M	Tumbleweed on both slopes obscures visibility for inspection. : Remove tumbleweed.	36.830760 ° -120.300750 °	36.821670 ° -120.302630 °	0027 Y
28			Levee Embankments	Animal Control		U	Rodent holes on both sides of the levee. 1-2 inch diameter holes. : Control rodents and fill Holes.	36.820873 ° -120.302797 °	0.000000 ° 0.000000 °	0028 Y
29			Levee Embankments	Seepage		A	Rock on LS slope. : NA	36.806733 ° -120.308957 °	0.000000 ° 0.000000 °	0029 Y
30			Levee Embankments	Seepage		A	Rock along LS slope. Continuous. : NA	36.797650 ° -120.308520 °	36.806800 ° -120.309070 °	0031 Y
31			Levee Embankments	Animal Control		M	Rodent hole in WS slope. 4 feet deep into the levee 8 inches wide. : Control rodents and fill holes.	36.795965 ° -120.308365 °	0.000000 ° 0.000000 °	0032
32			Levee Embankments	Encroachments		U	Gravity line thru levee for irrigation. Gate well and slide gate at WS hinge. Gate closed. : Confirm permit status and video inspect pipe thru levee.	36.794557 ° -120.307773 °	0.000000 ° 0.000000 °	0033
33			Levee Embankments	Encroachments		U	2 pipes cross levee. 1 Natural gas. 1 unknown. Unknown pipe does not daylight on WS and is dented at LS toe. No positive closure on WS of levee for either pipe. : Determine permit status of pipes. Video inspect pipes thru levee or pressure test.	36.793330 ° -120.305940 °	0.000000 ° 0.000000 °	0034
34			Levee Embankments	Encroachments		U	Gas pipeline crosses under levee. Unknown depth. : Confirm permit status. Video inspect pipe thru levee or pressure test.	36.792887 ° -120.305002 °	0.000000 ° 0.000000 °	0035
35			Levee Embankments	Encroachments		U	Gas pipeline crosses levee. Appears to be perpendicular to alignment. Crosses under levee. Unknown depth. : Confirm permit status. Video inspect pipe thru levee or pressure test.	36.792648 ° -120.304530 °	0.000000 ° 0.000000 °	0036
36			Levee Embankments	Unwanted Vegetation Growth		U	Elderberry on LS slope. Larger than 2" In dia. : NA	36.785027 ° -120.300017 °	0.000000 ° 0.000000 °	0037
37			Flood Damage Reduction Channels	Concrete Surfaces		M	Spalling along RB wing wall. : Monitor and repair if conditions worsen.	36.773937 ° -120.284412 °	0.000000 ° 0.000000 °	0038

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L018_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
38			Flood Damage Reduction Channels	Vegetation and Obstructions		U	Trash racks missing on control structure. : Replace trash racks.	36.773930 ° -120.284463 °	0.000000 ° 0.000000 °	0039
39			Levee Embankments	Animal Control		U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0040

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Grass on LS slope obscures visibility for inspection, longer than 12 inches. No trees in this reach.

USACE_CESPK_L018_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.974270 ° -120.363510 °	36.958420 ° -120.355120 °

Rating³: M

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: 2 1/2 foot diameter hole on LS slope. Rodent activity on WS.

USACE_CESPK_L018_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.956168 ° -120.353700 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cuttings, barrels, fencing on LS toe.

USACE_CESPK_L018_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.955212 ° -120.353078 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Standpipe on WS beyond WS toe. Appears abandoned. No WS positive closure.

USACE_CESPK_L018_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.952895 ° -120.351503 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Power line crosses crown.

USACE_CESPK_L018_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.952408 ° -120.351535 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides. Large holes on LS, at least 5 feet deep into levee.

USACE_CESPK_L018_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.948587 ° -120.349028 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump on WS. Standpipe beyond WS toe. Conduit to channel with trash rack. No flap gate or WS positive closure.

USACE_CESPK_L018_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.945573 ° -120.347145 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump on WS. Standpipe beyond WS toe. Conduit to channel with trash rack. No flap gate or WS positive closure.

USACE_CESPK_L018_2011_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
36.945573 ° -120.347145 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Pump on WS. Standpipe beyond WS toe. Conduit to channel with trash rack. No flap gate or WS positive closure.

USACE_CESPK_L018_2011_a_0007_3.jpg

GPS Latitude/Longitude	
Start	End
36.945573 ° -120.347145 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes. Hole 2 feet deep on LS.

USACE_CESPK_L018_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.937680 ° -120.344310 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes. Hole 2 feet deep on LS.

USACE_CESPK_L018_2011_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
36.937680 ° -120.344310 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes. Extends for 30 feet along levee.

USACE_CESPK_L018_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.928663 ° -120.340772 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number[1]	0010
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Remarks: Grass longer than 12" on LS slope. Tumbleweed on LS slope obscures slope and toe.	

USACE_CESPK_L018_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.927710 ° -120.340630 °	36.916540 ° -120.336300 °
Rating[3]: M	

LIS Issue Number[1]	0011
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting
Remarks: Water ponding at LS toe.	

USACE_CESPK_L018_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.909922 ° -120.333927 °	0.000000 ° 0.000000 °
Rating[3]: M	

LIS Issue Number[1]	0012
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Remarks: Rodent holes on LS slope. At least 23 holes in 60 feet. Some as deep as 3 feet into the levee.	

USACE_CESPK_L018_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.895203 ° -120.327647 °	0.000000 ° 0.000000 °
Rating[3]: M	

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number[1]	0013
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes at LS toe as deep as 3 feet.

USACE_CESPK_L018_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.881193 ° -120.321222 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0014
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. No flap gate at WS. Gate well and slide gate at WS hinge. CMP gravity line for irrigation.

USACE_CESPK_L018_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.872482 ° -120.319100 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0014
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. No flap gate at WS. Gate well and slide gate at WS hinge. CMP gravity line for irrigation.

USACE_CESPK_L018_2011_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
36.872482 ° -120.319100 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes at LS toe.

USACE_CESPK_L018_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
36.860652 ° -120.317117 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L018_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.848796 ° -120.316199 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L018_2011_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
36.848796 ° -120.316199 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L018_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.848854 °	0.000000 °
-120.316342 °	0.000000 °

Rating³: U

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS slope. 1-2 inch dia holes.

USACE_CESPK_L018_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
36.845115 °	0.000000 °
-120.316122 °	0.000000 °

Rating³: M

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS of levee. Worst on LS. Numerous small dia holes.

USACE_CESPK_L018_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.842518 °	0.000000 °
-120.315508 °	0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tumbleweed on LS and WS slopes obscures visibility of slopes.

USACE_CESPK_L018_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
36.850300 ° -120.316400 °	36.836550 ° -120.308180 °

Rating³: M

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tumbleweed on LS and WS slopes obscures visibility of slopes.

USACE_CESPK_L018_2011_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
36.850300 ° -120.316400 °	36.836550 ° -120.308180 °

Rating³: M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L018_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
36.834763 ° -120.305968 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Small diameter holes on both sides of levee 1-2 inches in dia.

USACE_CESPK_L018_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
36.831795 ° -120.302325 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Small diameter holes on both sides of levee 1-2 inches in dia.

USACE_CESPK_L018_2011_a_0022_2.jpg

GPS Latitude/Longitude	
Start	End
36.831795 ° -120.302325 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rapid deployment flood wall (RDFW) landside of levee outside of project right of way. Possible seepage location?

USACE_CESPK_L018_2011_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
36.827869 ° -120.300428 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rapid deployment flood wall (RDFW) landside of levee outside of project right of way. Possible seepage location?

USACE_CESPK_L018_2011_a_0023_2.jpg

GPS Latitude/Longitude	
Start	End
36.827869 ° -120.300428 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rapid deployment flood wall (RDFW) landside of levee outside of project right of way. Possible seepage location?

USACE_CESPK_L018_2011_a_0023_3.jpg

GPS Latitude/Longitude	
Start	End
36.827869 ° -120.300428 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Hole in crown that will pond water. Less than 6 inches deep.

USACE_CESPK_L018_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.827320 ° -120.300237 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee. Small diameter holes.

USACE_CESPK_L018_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
36.824740 ° -120.301215 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee. Small diameter holes.

USACE_CESPK_L018_2011_a_0025_2.jpg

GPS Latitude/Longitude	
Start	End
36.824740 ° -120.301215 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Train car chassis in channel bottom.

USACE_CESPK_L018_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.821927 ° -120.300805 °	0.000000 ° 0.000000 °

Rating³: M

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number[1]	0027
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tumbleweed on both slopes obscures visibility for inspection.

USACE_CESPK_L018_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.830760 ° -120.300750 °	36.821670 ° -120.302630 °
Rating[3]:	M

LIS Issue Number[1]	0028
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of the levee. 1-2 inch diameter holes.

USACE_CESPK_L018_2011_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
36.820873 ° -120.302797 °	0.000000 ° 0.000000 °
Rating[3]:	U

LIS Issue Number[1]	0029
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rock on LS slope.

USACE_CESPK_L018_2011_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.806733 ° -120.308957 °	0.000000 ° 0.000000 °
Rating[3]:	A

---

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 3, 6, 18 - Eastside-Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 18, Chowchilla Bypass left bank above Fresno River (L018)	Left	15.33	USACE	3/9/2011 3/10/2011	Ryan Larson

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rock on LS slope.

USACE_CESPK_L018_2011_a_0029_2.jpg

GPS Latitude/Longitude	
Start	End
36.806733 ° -120.308957 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Rock along LS slope. Continuous.

USACE_CESPK_L018_2011_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.797650 ° -120.308520 °	36.806800 ° -120.309070 °

Rating³: A

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

FEB - 4 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between March 29 and 31, 2011, inspectors Ryan Larson, Bob Murakami, Gene Vaughan, and Jerilynn Hilmar from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5, 8, 9, and 22 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 4 segments:

Segment Name
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)
Lower San Joaquin LD - Unit 9, Owens Creek right bank (L009)
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Classification	Status	Time to Fix Before Becoming Inactive
Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5, 8, 9, and 22 system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, and animal control. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation and depressions/rutting (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channels portions of the system. Ensure fences within the floodway are cleared of debris prior to the flood season and after high flows.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable.

It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Merced County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee inspection reports with photos

System
LSJLD-Units 5, 8, 9, and 22
Unacceptable - Inactive

		LSJLD- U 5 Deep Slough right bank above Bear Creek (L05B)	LSJLD- U 8 Bear Creek left bank (L008)	LSJLD- U 9 Owens Creek right bank (L009)	LSJLD- U 22 East Side Canal left bank abv Bear Cr (L22B)					
General	Operations and Maintenance Manuals	A	A	A	A					
	Emergency Supplies and Equipment	A	A	A	A					
	Flood Preparedness and Training	A	A	A	A					
Levee Embankments	Unwanted Vegetation Growth	A	U	U	U					
	Sod Cover	NA	NA	NA	NA					
	Encroachments	U	U	U	U					
	Closure Structures	NA	NA	NA	NA					
	Slope Stability	A	A	A	U					
	Erosion/Bank Caving	A	A	M	U					
	Settlement	A	A	A	A					
	Depressions/Rutting	M	A	A	U					
	Cracking	A	A	A	A					
	Animal Control	U	U	U	U					
	Culverts/Discharge Pipes	NA	NA	NA	NA					
	Riprap Revetments & Bank Protection	NA	NA	NA	NA					
	Revetments other than Riprap	NA	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA					
	Seepage	A	A	A	A					
Flood Damage Reduction Channels	Vegetation and Obstructions	M	A	M	A					
	Shoaling	A	A	A	A					
	Encroachments	A	A	M	U					
	Erosion	A	A	A	A					
	Concrete Surfaces	NA	NA	NA	NA					
	Tilting, Sliding, or Settlement of Concrete	NA	NA	NA	NA					
	Foundation of Concrete Structures	NA	NA	NA	NA					
	Slab and Monolith Joints	NA	NA	NA	NA					
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA					
	Riprap Revetments & Banks	NA	NA	NA	NA					
	Revetments other than Riprap	NA	NA	NA	NA					

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

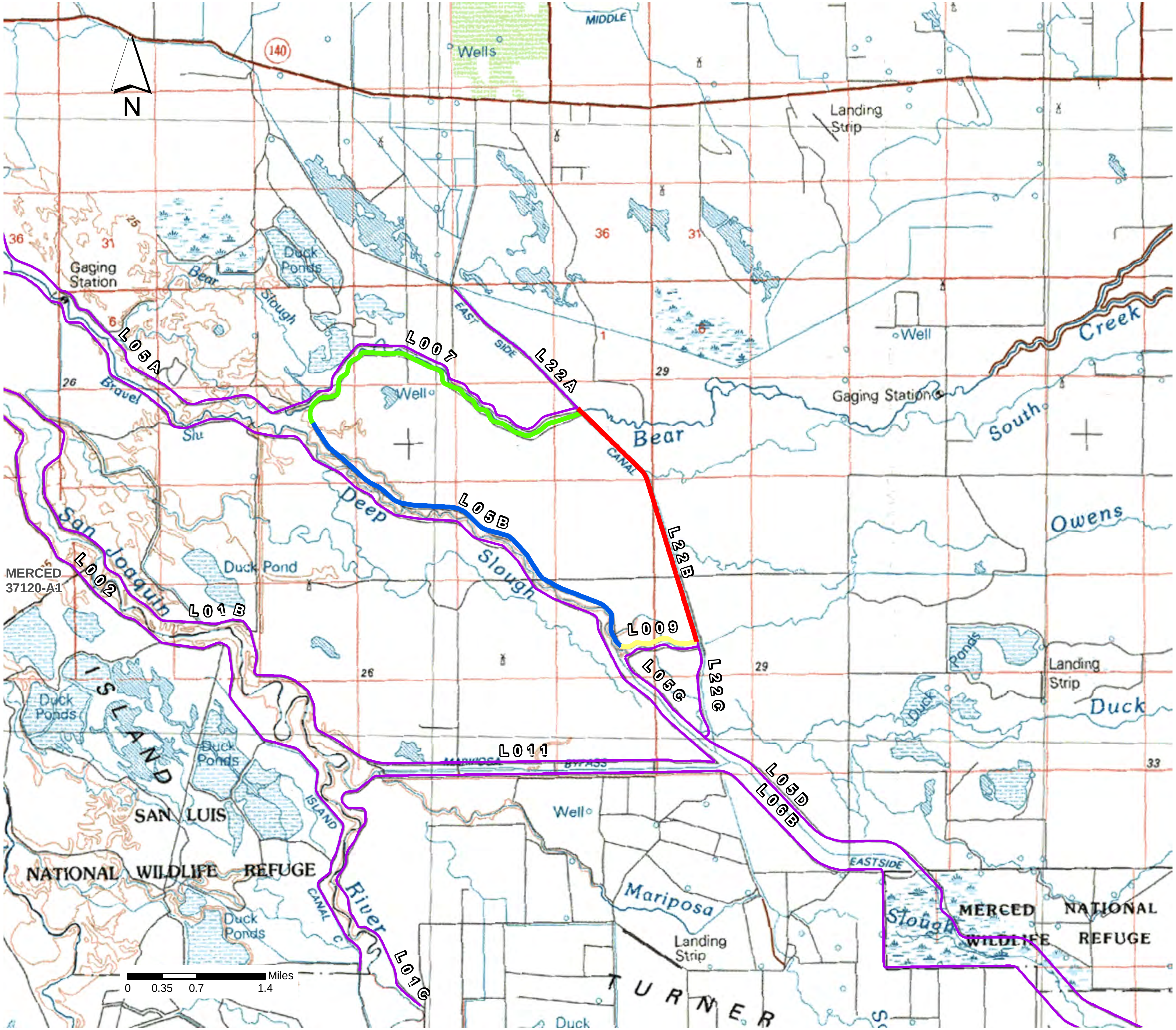
Not Likely to Prevent Performance In Next Flood Event/Active

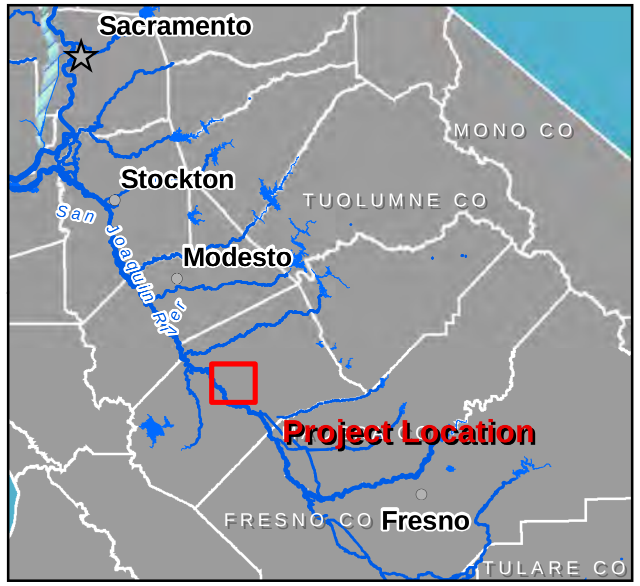
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

11/13/2012





Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- 🟥 Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek
- 🟦 Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek
- 🟩 Lower San Joaquin LD - Unit 8, Bear Creek left bank
- 🟨 Lower San Joaquin LD - Unit 9, Owens Creek right bank
- 🟪 Other Federal Levees

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN LEVEE DISTRICT
Units 5, 8, 9, 22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek/LSJLD-Units 5, 8, 9, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson

Date of Inspection: March 30 - 30, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
- ☐ **Acceptable**
- ☑ **Minimally Acceptable**
- ☐ **Unacceptable**

Contents of this Report:
- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	A	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	M	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	M	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate and gate well at WS hinge. : Video inspect pipe thru levee.	37.221461 ° -120.713767 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		M	Barbed wire fence in channel. : Remove fence and posts from channel.	37.228585 ° -120.724454 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		M	Barbed wire fences (2) across channel. Low water crossing for vehicles. : Ensure design flow passes. Clear debris.	37.229776 ° -120.727700 °	0.000000 ° 0.000000 °	0004 Y
4			Levee Embankments	Encroachments		U	Utility pole off LS toe. : Ensure pole is permitted or off project right of way.	37.230017 ° -120.726768 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Depressions/ Rutting		M	Rutting in crown. : Repair Crown.	37.229888 ° -120.726656 °	0.000000 ° 0.000000 °	0006 Y
6			Levee Embankments	Encroachments		U	Possible pipe thru levee. Headwall on LS. Water too high to verify. : Ensure flap gate on WS and video inspect pipe thru levee.	37.232647 ° -120.728845 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on both sides. Water too high to see flapgate. : Video inspect pipe thru levee.	37.238893 ° -120.739573 °	0.000000 ° 0.000000 °	0008 Y
8			Levee Embankments	Encroachments		M	Barbed wire fence across channel. Not a major obstruction to flow. : Remove fence and deplores from channel.	37.239811 ° -120.742599 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Water too high to verify flap gate on WS. : Video inspect pipe thru levee.	37.240628 ° -120.746937 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Encroachments		M	Damage from cattle on LS slope. : Restore levee slope.	37.240630 ° -120.747990 °	37.240740 ° -120.749810 °	0011 Y
11			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Water too high to verify flap gate on WS. : Video inspect pipe thru levee.	37.245958 ° -120.760615 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Encroachments		M	Barbed wire fence in channel, not a major impediment to flow. : Remove fence and debris.	37.245749 ° -120.761536 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments		M	Cattle on LS slope have caused damage. : Restore slope.	37.249000 ° -120.764900 °	37.251410 ° -120.767060 °	0014 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05B_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate and gate well at WS hinge.

USACE_CESPK_L05B_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.221461 ° -120.713767 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence in channel.

USACE_CESPK_L05B_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.228585 ° -120.724454 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fences (2) across channel. Low water crossing for vehicles.

USACE_CESPK_L05B_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.229776 ° -120.727700 °	0.000000 ° 0.000000 °
Rating³: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility pole off LS toe.

USACE_CESPK_L05B_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.230017 ° -120.726768 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting in crown.

USACE_CESPK_L05B_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.229888 ° -120.726656 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Possible pipe thru levee. Headwall on LS. Water too high to verify.

USACE_CESPK_L05B_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.232647 ° -120.728845 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on both sides. Water too high to see flapgate.

USACE_CESPK_L05B_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.238893 °	0.000000 °
-120.739573 °	0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence across channel. Not a major obstruction to flow.

USACE_CESPK_L05B_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.239811 °	0.000000 °
-120.742599 °	0.000000 °

Rating³: M

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Water too high to verify flap gate on WS.

USACE_CESPK_L05B_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.240628 °	0.000000 °
-120.746937 °	0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Damage from cattle on LS slope.

USACE_CESPK_L05B_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.240630 ° -120.747990 °	37.240740 ° -120.749810 °
Rating³:	M

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS. Water too high to verify flap gate on WS.

USACE_CESPK_L05B_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.245958 ° -120.760615 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence in channel, not a major impediment to flow.

USACE_CESPK_L05B_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.245749 ° -120.761536 °	0.000000 ° 0.000000 °
Rating³:	M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Bear Creek (L05B)	Right	4.13	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0014
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle on LS slope have caused damage.

USACE_CESPK_L05B_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.249000 ° -120.764900 °	37.251410 ° -120.767060 °

Rating[3]: M

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 8, Bear Creek left bank/LSJLD-Units 5, 8, 9, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson

Date of Inspection: March 30 - 30, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

L008

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	**N/A**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Unwanted Vegetation Growth		U	Grass and weeds obscure slope for inspection. : Cut or mow grass.	37.257025 ° -120.764503 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS and WS. : Video inspect pipe thru levee.	37.258683 ° -120.763543 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Animal Control		M	Small rodent holes in crown. : Control rodents and fill holes.	37.258702 ° -120.763548 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Animal Control		M	Rodent hole in crown. Rodents physically present in area. : Control rodents and fill holes.	37.260036 ° -120.762648 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwalls on both sides. : Video inspect pipe thru levee.	37.260317 ° -120.762098 °	0.000000 ° 0.000000 °	0006 Y
6			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on both slopes obscures visibility for inspection. : Cut or mow grass.	37.259210 ° -120.763510 °	37.262370 ° -120.760640 °	0007 Y
7			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS. : Video inspect pipe thru levee.	37.262358 ° -120.760493 °	0.000000 ° 0.000000 °	0008 Y
8			Levee Embankments	Animal Control		U	Rodent holes on both sides of levee. : Control rodents and fill holes.	37.263255 ° -120.756770 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS. : Video inspect pipe thru levee.	37.263187 ° -120.755418 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Encroachments		M	Cattle trails on LS slope. : Restore slope.	37.263185 ° -120.755433 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Animal Control		M	11 rodent holes on LS slope. No activity on WS. : Control rodents and fill holes.	37.263187 ° -120.752823 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwall on both sides. : Video inspect pipe thru levee.	37.263162 ° -120.752283 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Control rodents and fill holes.	37.260603 ° -120.745040 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwall on WS. : Video inspect pipe thru levee.	37.258210 ° -120.742850 °	0.000000 ° 0.000000 °	0015 Y
15			Levee Embankments	Encroachments		M	Cattle trails on slopes causing erosion. : Restore slopes.	37.258082 ° -120.742477 °	0.000000 ° 0.000000 °	0016 Y
16			Levee Embankments	Encroachments		U	Pipe thru levee. Headwalls or both sides. Flap gate on WS. : Video inspect pipe thru levee.	37.257818 ° -120.741608 °	0.000000 ° 0.000000 °	0017 Y
17			Levee Embankments	Animal Control		M	Holes in LS slope. No activity on WS. : Fill holes and control rodents.	37.257818 ° -120.741647 °	0.000000 ° 0.000000 °	0018 Y
18			Levee Embankments	Animal Control		M	Rodent holes on LS slope. : Control rodents and fill holes.	37.257167 ° -120.740708 °	0.000000 ° 0.000000 °	0019 Y
19			Levee Embankments	Unwanted Vegetation Growth		U	Thick vegetation on LS slope and toe obscures visibility for inspection. : Cut or Mow.	37.252800 ° -120.734680 °	37.252420 ° -120.733170 °	0020 Y
20			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwalls on both sides of levee. : Video inspect pipe thru levee.	37.252220 ° -120.725520 °	0.000000 ° 0.000000 °	0021 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L008_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

Index¹	Levee Mile Start	Levee Mile End	Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude Start	GPS Latitude/Longitude End	Issue No. ⁴ Photo ⁵
21			Levee Embankments	Encroachments		M	Utility poles at LS toe. : Permit or remove from project right of way.	37.252390 ° -120.724590 °	37.253720 ° -120.719200 °	0022 Y
22			Levee Embankments	Animal Control		U	No rodent control program in place. Rodent holes in levee slopes. : Control rodents and repair holes.	37.260603 ° -120.745040 °	0.000000 ° 0.000000 °	0023

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L008_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Grass and weeds obscure slope for inspection.

USACE_CESPK_L008_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.257025 ° -120.764503 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwall on LS and WS.

USACE_CESPK_L008_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.258683 ° -120.763543 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Small rodent holes in crown.

USACE_CESPK_L008_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.258702 ° -120.763548 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent hole in crown. Rodents physically present in area.

USACE_CESPK_L008_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.260036 ° -120.762648 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on both sides.

USACE_CESPK_L008_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.260317 ° -120.762098 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on both sides.

USACE_CESPK_L008_2011_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.260317 ° -120.762098 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on both slopes obscures visibility for inspection.

USACE_CESPK_L008_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.259210 ° -120.763510 °	37.262370 ° -120.760640 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS.

USACE_CESPK_L008_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.262358 ° -120.760493 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS.

USACE_CESPK_L008_2011_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
37.262358 ° -120.760493 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0009
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both sides of levee.

USACE_CESPK_L008_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.263255 ° -120.756770 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0010
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS.

USACE_CESPK_L008_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.263187 ° -120.755418 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0010
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls on both sides of levee. Flap gate on WS.

USACE_CESPK_L008_2011_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
37.263187 ° -120.755418 °	0.000000 ° 0.000000 °

Rating[3]: U

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trails on LS slope.

USACE_CESPK_L008_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.263185 ° -120.755433 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: 11 rodent holes on LS slope. No activity on WS.

USACE_CESPK_L008_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.263187 ° -120.752823 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwall on both sides.

USACE_CESPK_L008_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.263162 ° -120.752283 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwall on both sides.

USACE_CESPK_L008_2011_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
37.263162 ° -120.752283 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both slopes.

USACE_CESPK_L008_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.260603 ° -120.745040 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwall on WS.

USACE_CESPK_L008_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.258210 ° -120.742850 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trails on slopes causing erosion.

USACE_CESPK_L008_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.258082 ° -120.742477 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0017
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls or both sides. Flap gate on WS.

USACE_CESPK_L008_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.257818 ° -120.741608 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0017
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Headwalls or both sides. Flap gate on WS.

USACE_CESPK_L008_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.257818 ° -120.741608 °	0.000000 ° 0.000000 °

Rating[3]: U

---

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Holes in LS slope. No activity on WS.

USACE_CESPK_L008_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.257818 ° -120.741647 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope.

USACE_CESPK_L008_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.257167 ° -120.740708 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Thick vegetation on LS slope and toe obscures visibility for inspection.

USACE_CESPK_L008_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.252800 ° -120.734680 °	37.252420 ° -120.733170 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 8, Bear Creek left bank (L008)	Left	3.62	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on both sides of levee.

USACE_CESPK_L008_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.252220 ° -120.725520 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwalls on both sides of levee.

USACE_CESPK_L008_2011_a_0021_2.jpg

GPS Latitude/Longitude	
Start	End
37.252220 ° -120.725520 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility poles at LS toe.

USACE_CESPK_L008_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.252390 ° -120.724590 °	37.253720 ° -120.719200 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 9, Owens Creek right bank/LSJLD-Units 5, 8, 9, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson, Bob Murakami   Date of Inspection: March 30 - 30, 2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By: Date of ITR:

Final Approval By: Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☑ **Minimally Acceptable**
☐ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

L009

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	M	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**M**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**M**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Periodic)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board | Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 9, Owens Creek right bank (L009)	Right	0.80	State	3/30/2011 3/30/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Encroachments		U	Pipe thru levee. Gate well on WS accessible from crown. Slide gate at crown. : Video inspect pipe thru levee.	37.220093 ° -120.698443 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation obscures both slopes for inspection. : Mow grass and weeds.	37.220033 ° -120.698437 °	0.000000 ° 0.000000 °	0002 Y
3			Flood Damage Reduction Channels	Encroachments		M	Gaging station in channel. : NA	37.219611 ° -120.699211 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments		U	Pipe thru levee. Flap gate on WS. Headwall on WS and LS. : Video inspect pipe thru levee.	37.219860 ° -120.701392 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate and gate well on WS hinge. : Video inspect pipe thru levee.	37.220447 ° -120.705207 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Erosion/ Bank Caving		M	Erosion of WS slope. : Restore slope.	37.220268 ° -120.705630 °	0.000000 ° 0.000000 °	0006 Y
7			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Barbed wire fence across channel. : Remove fence and debris in channel.	37.219647 ° -120.706291 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		M	Cattle grazing levee slopes. Damage from cattle on slopes. : Restore slopes and depressions caused by cattle.	37.219970 ° -120.706500 °	37.220040 ° -120.698170 °	0008 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L009_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 9, Owens Creek right bank (L009)	Right	0.80	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Gate well on WS accessible from crown. Slide gate at crown.

USACE_CESPK_L009_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.220093 ° -120.698443 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation obscures both slopes for inspection.

USACE_CESPK_L009_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.220033 ° -120.698437 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Gaging station in channel.

USACE_CESPK_L009_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.219611 ° -120.699211 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 9, Owens Creek right bank (L009)	Right	0.80	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwall on WS and LS.

USACE_CESPK_L009_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.219860 ° -120.701392 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Flap gate on WS. Headwall on WS and LS.

USACE_CESPK_L009_2011_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.219860 ° -120.701392 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Sluice gate and gate well on WS hinge.

USACE_CESPK_L009_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.220447 ° -120.705207 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 9, Owens Creek right bank (L009)	Right	0.80	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope.

USACE_CESPK_L009_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.220268 ° -120.705630 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Barbed wire fence across channel.

USACE_CESPK_L009_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.219647 ° -120.706291 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle grazing levee slopes. Damage from cattle on slopes.

USACE_CESPK_L009_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.219970 ° -120.706500 °	37.220040 ° -120.698170 °
Rating³: M	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek/LSJLD-Units 5, 8, 9, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson, Bob Murakami

Date of Inspection: March 30 - 30, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

L22B

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	U	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	U	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	U	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS slope. : Restore to as built condition.	37.254020 ° -120.718630 °	37.251350 ° -120.715330 °	0001 Y
2			Levee Embankments	Encroachments		M	Barbed wire fence across channel. : Remove fence and debris.	37.251307 ° -120.715090 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments		U	Pipe appears to cross levee. Pump on LS. Cannot see pipe daylight on WS due to high water. : Video inspect pipe thru levee.	37.249008 ° -120.712477 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS Slope. : Restore slope to design lines and grade.	37.248872 ° -120.712317 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Depressions/ Rutting		M	Rutting on crown. : Repair crown. Slope to drain off crown.	37.248683 ° -120.712110 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Unwanted Vegetation Growth		U	Tree in WS slope. : Remove tree and roots. Restore levee.	37.248217 ° -120.711552 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Depressions/ Rutting		U	Rutting in crown greater than 6" deep. : Restore crown so water does not pond.	37.246397 ° -120.709157 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Unwanted Vegetation Growth		U	Tree greater than 2" in WS slope. : Remove tree and roots. Restore levee.	37.245678 ° -120.708303 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Depressions/ Rutting		M	Rutting in crown. : Slope crown to drain.	37.244540 ° -120.707217 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Unwanted Vegetation Growth		U	Tree greater than 2' In dia. : Remove tree and roots. Restore levee.	37.243757 ° -120.706873 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS slope. : Restore slope.	37.239740 ° -120.705388 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Slope Stability		U	Active slope failure on WS. : Restore slope.	37.239718 ° -120.705377 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS slope. : Restore slope.	37.241450 ° -120.706000 °	37.231790 ° -120.702400 °	0014 Y
14			Levee Embankments	Unwanted Vegetation Growth		U	Tree in WS slope greater than 2". : Remove tree and roots. Restore slope.	37.234097 ° -120.703320 °	0.000000 ° 0.000000 °	0015
15			Levee Embankments	Encroachments		U	Bridge across channel. Soffit below crown of levee. Levee dips in elevation at bridge. : Ensure channel can pass design flow.	37.229916 ° -120.701536 °	0.000000 ° 0.000000 °	0016 Y
16			Levee Embankments	Unwanted Vegetation Growth		U	Tree greater than 2" in dia. : Remove tree and roots Restore slope.	37.229422 ° -120.701595 °	0.000000 ° 0.000000 °	0017 Y
17			Levee Embankments	Encroachments		U	Pipe thru levee. Slide gate on WS in gate well. Water moving to LS. : Video inspect pipe thru levee.	37.227605 ° -120.700955 °	0.000000 ° 0.000000 °	0018 Y
18			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on slopes obscures visibility for inspection. Longer than 12". : Mow grass.	37.251720 ° -120.715860 °	37.220950 ° -120.698570 °	0019 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L22B_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope.

USACE_CESPK_L22B_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.254020 ° -120.718630 °	37.251350 ° -120.715330 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence across channel.

USACE_CESPK_L22B_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.251307 ° -120.715090 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe appears to cross levee. Pump on LS. Cannot see pipe daylight on WS due to high water.

USACE_CESPK_L22B_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.249008 ° -120.712477 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0004
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS Slope.

USACE_CESPK_L22B_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.248872 ° -120.712317 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on crown.

USACE_CESPK_L22B_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.248683 ° -120.712110 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree in WS slope.

USACE_CESPK_L22B_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.248217 ° -120.711552 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting in crown greater than 6" deep.

USACE_CESPK_L22B_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.246397 ° -120.709157 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree greater than 2" in WS slope.

USACE_CESPK_L22B_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.245678 ° -120.708303 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting in crown.

USACE_CESPK_L22B_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.244540 ° -120.707217 °	0.000000 ° 0.000000 °
Rating³: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0010
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree greater than 2' In dia.

USACE_CESPK_L22B_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.243757 ° -120.706873 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0012
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope.

USACE_CESPK_L22B_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.239740 ° -120.705388 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0013
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Active slope failure on WS.

USACE_CESPK_L22B_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.239718 ° -120.705377 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0014
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope.

USACE_CESPK_L22B_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.241450 ° -120.706000 °	37.231790 ° -120.702400 °

🟥 Rating[3]: U

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Bridge across channel. Soffit below crown of levee. Levee dips in elevation at bridge.

USACE_CESPK_L22B_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.229916 ° -120.701536 °	0.000000 ° 0.000000 °

🟨 Rating[3]: U

LIS Issue Number[1]	0017
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree greater than 2" in dia.

USACE_CESPK_L22B_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.229422 ° -120.701595 °	0.000000 ° 0.000000 °

🟨 Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0018
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slide gate on WS in gate well. Water moving to LS.

USACE_CESPK_L22B_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.227605 ° -120.700955 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0018
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe thru levee. Slide gate on WS in gate well. Water moving to LS.

USACE_CESPK_L22B_2011_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.227605 ° -120.700955 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0019
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on slopes obscures visibility for inspection. Longer than 12".

USACE_CESPK_L22B_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.251720 ° -120.715860 °	37.220950 ° -120.698570 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5, 8, 9, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22, East Side Canal left bank above Bear Creek (L22B)	Left	2.74	State	3/30/2011 3/30/2011	Ryan Larson

LIS Issue Number[1]	0019
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on slopes obscures visibility for inspection. Longer than 12".

USACE_CESPK_L22B_2011_a_0019_2.jpg

GPS Latitude/Longitude	
Start	End
37.251720 ° -120.715860 °	37.220950 ° -120.698570 °
Rating[3]: U	

---

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

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DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 15 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

On March 31, 2011, inspectors Ryan Larson, Bob Murakami, and Gene Vaughan from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5, 10, and 22 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 3 segments:

Segment Names
LSJLD - Unit 5 Deep Slough right bank above Owens Creek (L05C)
LSJLD - Unit 10 Owens Creek left bank (L010)
LSJLD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Classification	Status	Time to Fix Before Becoming Inactive
Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5, 10, and 22 system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to erosion/bank caving, depressions/rutting, animal control, and tilting sliding, or settlement of concrete. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, encroachments, and foundation of concrete structures (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition.

Flood Damage Reduction Channels checklists are attached showing the observations from the channel portion of the system. Ensure control structures within the floodway are repaired and maintained in good operating condition.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable.

It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the Merced County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

Will Leady

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:
1) Report card
2) Map
3) Levee inspection reports with photos

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

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The system is comprised of 3 segments:

Segment Names
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The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Classification	Status	Time to Fix Before Becoming Inactive
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The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5, 10, and 22 system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to erosion/bank caving, depressions/rutting, animal control, and tilting sliding, or settlement of concrete. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, encroachments, and foundation of concrete structures (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition.

Flood Damage Reduction Channels checklists are attached showing the observations from the channel portion of the system. Ensure control structures within the floodway are repaired and maintained in good operating condition.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable.

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When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the Merced County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee inspection reports with photos

CEI 3/31/2011 LSJLD-Units 5, 10, and 22

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Faustino

Mahoney

Leady

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

O:\FP&Nav\ICW\!_Inspections_System Folders\LSJLD-Units 5, 10, and 22\2011 - CEI UI\CoverLetter_LSJLD-Units 5, 10, and 22_1.docx

System
LSJLD-Units 5, 10, and 22
Unacceptable - Inactive

		LSJLD- U 5 Deep Slough right bank above Owens Creek (L05C)	LSJLD- U 10 Owens Creek left bank (L010)	LSJLD- U 22 East Side Canal left bank above Owens Creek (L22C)
General	Operations and Maintenance Manuals	A	A	A
	Emergency Supplies and Equipment	A	A	A
	Flood Preparedness and Training	A	A	A
Levee Embankments	Unwanted Vegetation Growth	U	U	U
	Sod Cover	NA	NA	NA
	Encroachments	U	U	U
	Closure Structures	NA	NA	NA
	Slope Stability	A	A	A
	Erosion/Bank Caving	A	A	U
	Settlement	A	A	A
	Depressions/Rutting	A	A	U
	Cracking	A	A	A
	Animal Control	U	U	U
	Culverts/Discharge Pipes	NA	NA	NA
	Riprap Revetments & Bank Protection	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA
	Seepage	A	A	A
Flood Damage Reduction Channels	Vegetation and Obstructions	A	A	A
	Shoaling	A	A	A
	Encroachments	M	A	A
	Erosion	A	A	U
	Concrete Surfaces	NA	NA	A
	Tilting, Sliding, or Settlement of Concrete	NA	NA	U
	Foundation of Concrete Structures	NA	NA	U
	Slab and Monolith Joints	NA	NA	NA
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA
	Riprap Revetments & Banks	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event/Active

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

8/4/2012

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 5, Deep Slough right bank above Owens Creek/LSJLD-Units 5, 10, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson, Bob Murakami

Date of Inspection: March 31 - 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:
☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:
☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	**Continuing Eligibility Inspections**	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	**System**	**Segment**
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	**Rural**	**Urban**
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	A	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	M	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Owens Creek (L05C)	Right	1.16	State	3/31/2011 3/31/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Encroachments		U	Pipe thru levee. Headwall on LS. Flap gate appears to be working. : Video inspect pipe thru levee	37.217893 ° -120.711463 °	0.000000 ° 0.000000 °	0001 Y
2			Flood Damage Reduction Channels	Encroachments		M	Barbed wire fence across channel. Not a major obstruction to flow. : Remove fence and debris from channel	37.213308 ° -120.706682 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on both slopes obscures visibility for inspection. : Cut or mow grass	37.217860 ° -120.711430 °	37.213620 ° -120.706630 °	0003 Y
4			Levee Embankments	Animal Control		U	Rodent holes on both slopes and crown. Small diameter holes 1-2". : Control rodents and fill holes.	37.217850 ° -120.711430 °	37.213740 ° -120.706730 °	0004 Y
5			Levee Embankments	Encroachments		U	Pipe thru levee. Screw gate at LS. Under water. WS submerged. : Video inspect pipe thru levee	37.209625 ° -120.702127 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Encroachments		M	Gaging station on WS. : Ensure station is permitted.	37.206427 ° -120.697795 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		M	Cattle trails and damage from cattle on both slopes. : Restore slopes and prevent damage.	37.213690 ° -120.706690 °	37.206050 ° -120.697160 °	0007 Y
8			Levee Embankments	Animal Control		U	No rodent control program in place. Holes in both levees. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0008

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05C_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Owens Creek (L05C)	Right	1.16	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee . Headwall on LS. Flap gate appears to be working.

USACE_CESPK_L05C_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.217893 ° -120.711463 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fence across channel. Not a major obstruction to flow.

USACE_CESPK_L05C_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.213308 ° -120.706682 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes obscures visibility for inspection.

USACE_CESPK_L05C_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.217860 ° -120.711430 °	37.213620 ° -120.706630 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Owens Creek (L05C)	Right	1.16	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes and crown. Small diameter holes 1-2".

USACE_CESPK_L05C_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.217850 ° -120.711430 °	37.213740 ° -120.706730 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes and crown. Small diameter holes 1-2".

USACE_CESPK_L05C_2011_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.217850 ° -120.711430 °	37.213740 ° -120.706730 °

Rating³: U

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Screw gate at LS. Under water. WS submerged.

USACE_CESPK_L05C_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.209625 ° -120.702127 °	0.000000 ° 0.000000 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Deep Slough right bank above Owens Creek (L05C)	Right	1.16	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Gaging station on WS.

USACE_CESPK_L05C_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.206427 ° -120.697795 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle trails and damage from cattle on both slopes.

USACE_CESPK_L05C_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.213690 ° -120.706690 °	37.206050 ° -120.697160 °

Rating³: M

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 10, Owens Creek left bank/LSJLD-Units 5, 10, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson, Bob Murakami

Date of Inspection: March 31 - 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:
- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:
- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:
- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 10, Owens Creek left bank (L010)	Left	0.79	State	3/31/2011 3/31/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		M	Barbed wire fence at LS hinge and down slope. Fence moves away from levee toe. : Remove fence from project right of way.	37.219343 ° -120.698205 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Pipe thru levee. Sluice gate in gatewell on WS slope. : Video inspect pipe thru levee.	37.219092 ° -120.706693 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on both slopes obscures visibility for inspection, longer than 12". : Cut or mow grass.	37.217940 ° -120.711390 °	37.219310 ° -120.698060 °	0003 Y
4			Levee Embankments	Animal Control		U	Rodent holes on both slopes and crown. Rodents physically present. : Control rodents and repair holes.	37.218160 ° -120.710980 °	37.219310 ° -120.698200 °	0004 Y
5			Levee Embankments	Animal Control		U	No rodent control program in place. Holes in both levees. : Control rodetns and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0005

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L010_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 10, Owens Creek left bank (L010)	Left	0.79	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire fence at LS hinge and down slope. Fence moves away from levee toe.

USACE_CESPK_L010_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.219343 ° -120.698205 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Sluice gate in gatewell on WS slope.

USACE_CESPK_L010_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.219092 ° -120.706693 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes obscures visibility for inspection, longer than 12".

USACE_CESPK_L010_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.217940 ° -120.711390 °	37.219310 ° -120.698060 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 10, Owens Creek left bank (L010)	Left	0.79	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes obscures visibility for inspection, longer than 12".

USACE_CESPK_L010_2011_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
37.217940 ° -120.711390 °	37.219310 ° -120.698060 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes and crown. Rodents physically present.

USACE_CESPK_L010_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.218160 ° -120.710980 °	37.219310 ° -120.698200 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes and crown. Rodents physically present.

USACE_CESPK_L010_2011_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.218160 ° -120.710980 °	37.219310 ° -120.698200 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 10, Owens Creek left bank (L010)	Left	0.79	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes and crown. Rodents physically present.

USACE_CESPK_L010_2011_a_0004_3.jpg

GPS Latitude/Longitude	
Start	End
37.218160 ° -120.710980 °	37.219310 ° -120.698200 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² Location CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek/LSJLD-Units 5, 10, and 22

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative:

Sponsor Phone:

Sponsor Email:

Corps of Engineers Inspector: Ryan Larson, Bob Murakami

Date of Inspection: March 31 - 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	U	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	A	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	U	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	U	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Encroachments		U	Pipe thru levee. Slide gate on WS at hinge. : Video inspect pipe thru levee.	37.207005 ° -120.696230 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Unwanted Vegetation Growth		U	Grass long on LS and WS slopes. Obscures visibility for inspection. : Mow grass.	37.206290 ° -120.696200 °	37.209240 ° -120.697450 °	0002 Y
3			Levee Embankments	Depressions/ Rutting		U	2 depressions on WS slope. One is 4 feet deep. Slope failing in this location. Cracks around depression. : Restore WS slope.	37.213097 ° -120.697997 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS slope in location of depressions. Water eddying along slope. : Restore slope and prevent erosion.	37.213060 ° -120.697967 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Erosion/ Bank Caving		U	Bank caving on WS slope. : Restore slope and prevent erosion.	37.216565 ° -120.697510 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Depressions/ Rutting		M	Rutting in crown less than 6" deep. : Slope crown to drain.	37.218535 ° -120.697369 °	0.000000 ° 0.000000 °	0006 Y
7			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		U	Left bank upstream wing wall crack at joint. Rebar exposed. 2 foot deep hole at LS of joint. 5.5" crack at joint. : Repair wall.	37.219578 ° -120.697933 °	0.000000 ° 0.000000 °	0007 Y
8			Flood Damage Reduction Channels	Foundation of Concrete Structures		U	Hole near center of road 6 inches deep, 2 feet wide. : Repair hole.	37.219557 ° -120.697958 °	0.000000 ° 0.000000 °	0008 Y
9			Flood Damage Reduction Channels	Erosion		U	Erosion around walls on left bank, upstream and downstream of structure. : Repair erosion and armor so erosion does not continue.	37.219515 ° -120.697965 °	0.000000 ° 0.000000 °	0009 Y
10			Flood Damage Reduction Channels	Erosion		U	Erosion around walls on right bank of structure upstream and downstream. Half moon shaped cracking on upstream side. : Repair erosion and armor so erosion does not continue.	37.219808 ° -120.698058 °	0.000000 ° 0.000000 °	0010 Y
11			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Cracking at joint of RB wall on upstream side. : Repair crack and monitor.	37.219753 ° -120.698008 °	0.000000 ° 0.000000 °	0011 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L22C_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Slide gate on WS at hinge.

USACE_CESPK_L22C_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.207005 ° -120.696230 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Grass long on LS and WS slopes. Obscures visibility for inspection.

USACE_CESPK_L22C_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.206290 ° -120.696200 °	37.209240 ° -120.697450 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Red; Remarks: 2 depressions on WS slope. One is 4 feet deep. Slope failing in this location. Cracks around depression.

USACE_CESPK_L22C_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.213097 ° -120.697997 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Erosion of WS slope in location of depressions. Water eddying along slope.

USACE_CESPK_L22C_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.213060 ° -120.697967 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Unacceptable Red; Remarks: Bank caving on WS slope.

USACE_CESPK_L22C_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.216565 ° -120.697510 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Rutting in crown less than 6" deep.

USACE_CESPK_L22C_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.218535 ° -120.697369 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Unacceptable Red; Remarks: LB upstream wing wall crack at joint. Rebar exposed. 2 foot deep hole at LS of joint. 5.5" crack at joint.

USACE_CESPK_L22C_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.219578 ° -120.697933 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Unacceptable Red; Remarks: LB upstream wing wall crack at joint. Rebar exposed. 2 foot deep hole at LS of joint. 5.5" crack at joint.

USACE_CESPK_L22C_2011_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.219578 ° -120.697933 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Unacceptable Yellow; Remarks: Hole near center of road 6 inches deep, 2 feet wide.

USACE_CESPK_L22C_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.219557 ° -120.697958 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Erosion around walls on LB. Upstream and downstream of structure.

USACE_CESPK_L22C_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.219515 ° -120.697965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Erosion around walls on LB. Upstream and downstream of structure.

USACE_CESPK_L22C_2011_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
37.219515 ° -120.697965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Erosion around walls on RB of structure upstream and downstream. Half moon shaped cracking on upstream side.

USACE_CESPK_L22C_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.219808 ° -120.698058 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 10, and 22 Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 22 south, East Side Canal left bank above Owens Creek (L22C)	Left	1.03	State	3/31/2011 3/31/2011	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Erosion around walls on RB of structure upstream and downstream. Half moon shaped cracking on upstream side.

USACE_CESPK_L22C_2011_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
37.219808 ° -120.698058 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Minimally Acceptable; Remarks: Cracking at joint of RB wall on upstream side.

USACE_CESPK_L22C_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.219753 ° -120.698008 °	0.000000 ° 0.000000 °
Rating³:	M

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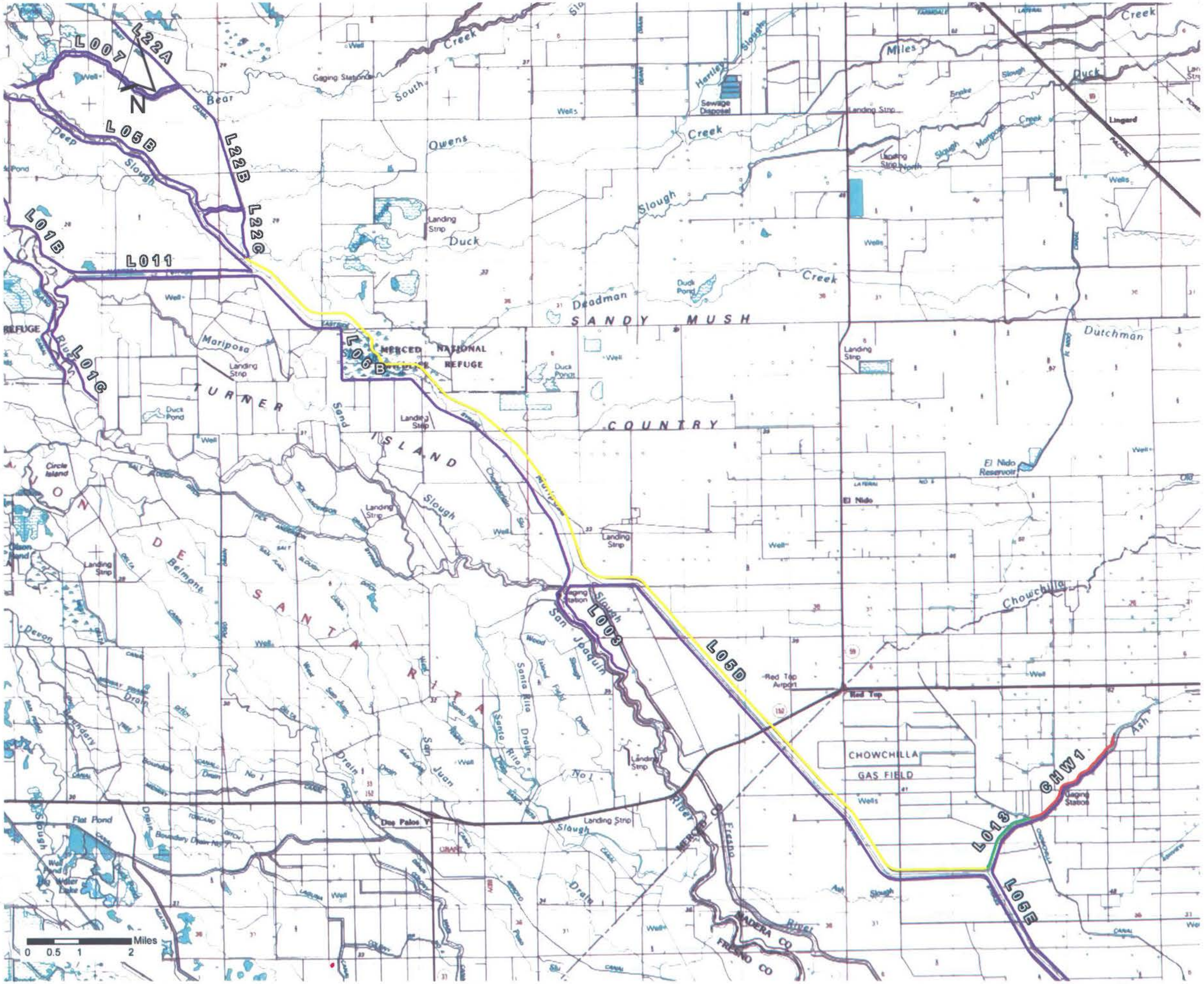
[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable



Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- Project Levees
- Chowchilla River - Ash Slough right bank
- Lower San Joaquin LD - Unit 13, Ash Slough right bank
- Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN LEVEE DISTRICT System - Units 5 and 13 Ash Slough Right Bank

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

ENCL 2

Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 20 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

On October 24th and 25th, 2011, inspectors Ryan Larson, Bob Murakami, and Gene Vaughan from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5 and 13 - Ash Slough right bank system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

This system is comprised of 3 segments:

Segment Name
Chowchilla River - Ash Slough right bank (CHW1)
Lower San Joaquin Levee District – Unit 5, Eastside Bypass RB Below Ash Slough (L05D)
Lower San Joaquin Levee District – Unit 13, Ash Slough Right Bank (L013)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the LSJLD-Units 5 and 13 - Ash Slough right bank system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, animal control, and foundation of concrete structures (shown in red on the attached report card). An engineering determination concluded that these items could prevent the system from performing during the next flood event.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, erosion/bank caving, and depressions/rutting and erosion within the channel (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system wide vegetation control program should be implemented in accordance with USACE standards, and any applicable laws or regulations that many govern.

Flood Damage Reduction Channels checklists are attached showing the observations from the channel portion of the project. As noted above, the foundation of the right bank wall of a drop structure in Ash Slough has eroded. This should be repaired immediately.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation letter, then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the conditions in the sponsor issued encroachment permit are being met.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact USACE to schedule an inspection.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Merced County Office of Emergency Services, Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army for SHADEN LENGSTEN
District Engineer LTC EN
DPTY CDR

Enclosures:
1) Report card
2) Map
3) Detailed photo report

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

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This system is comprised of 3 segments:

Segment Name
Chowchilla River - Ash Slough right bank (CHW1)
Lower San Joaquin Levee District – Unit 5, Eastside Bypass RB Below Ash Slough (L05D)
Lower San Joaquin Levee District – Unit 13, Ash Slough Right Bank (L013)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
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The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the LSJLD-Units 5 and 13 - Ash Slough right bank system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, animal control, and foundation of concrete structures (shown in red on the attached report card). An engineering determination concluded that these items could prevent the system from performing during the next flood event.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, erosion/bank caving, and depressions/rutting and erosion within the channel (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system wide vegetation control program should be implemented in accordance with USACE standards, and any applicable laws or regulations that many govern.

Flood Damage Reduction Channels checklists are attached showing the observations from the channel portion of the project. As noted above, the foundation of the right bank wall of a drop structure in Ash Slough has eroded. This should be repaired immediately.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation letter, then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the conditions in the sponsor issued encroachment permit are being met.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable USACE inspection rating, alone, does not equate to a certifiable levee for the NFIP.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact USACE to schedule an inspection.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Merced County Office of Emergency Services, Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Engineer

Enclosures:

1) Report card
2) Map
3) Detailed photo report

CEI 10/24/2011 LSJLD-Units 5 and 13 - Ash Slough right bank

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

SPK NLD

LARSON

NAGY

OLSEN

PERLEA

FONTAINE

POEPPELMAN

FAUSTINO

MAHONEY

LEADY

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	System LSJLD-Units 5 and 13 Unacceptable - Inactive	Chowchilla River - Ash Slough Right Bank (CHW1)	Lower San Joaquin LD - Unit 5, Eastside Bypass Right Bank Below Ash Slough (L05D)	Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)						
General	Operations and Maintenance Manuals	A	A	A						
	Emergency Supplies and Equipment	A	A	A						
	Flood Preparedness and Training	A	A	A						
Levee Embankments	Unwanted Vegetation Growth	🟨 U	🟨 U	🟨 U						
	Sod Cover	NA	NA	NA						
	Encroachments	🟨 U	🟥 U	🟨 U						
	Closure Structures	NA	NA	NA						
	Slope Stability	A	A	A						
	Erosion/Bank Caving	A	🟥 U	A						
	Settlement	A	A	A						
	Depressions/Rutting	🟨 U	A	A						
	Cracking	A	A	A						
	Animal Control	🟥 U	🟥 U	🟨 U						
	Culverts/Discharge Pipes	NA	NA	NA						
	Riprap Revetments & Bank Protection	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA						
	Seepage	A	A	A						
Flood Damage Reduction Channels	Vegetation and Obstructions	A	A	A						
	Shoaling	A	A	A						
	Encroachments	A	M	A						
	Erosion	A	A	🟨 U						
	Concrete Surfaces	NA	NA	A						
	Tilting, Sliding, or Settlement of Concrete	NA	NA	NA						
	Foundation of Concrete Structures	NA	NA	🟥 U						
	Slab and Monolith Joints	NA	NA	NA						
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA						
	Riprap Revetments & Banks	NA	NA	NA						
	Revetments other than Riprap	NA	NA	NA						

🟥 Likely Prevents Performance In Next Flood Event/Inactive

🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe

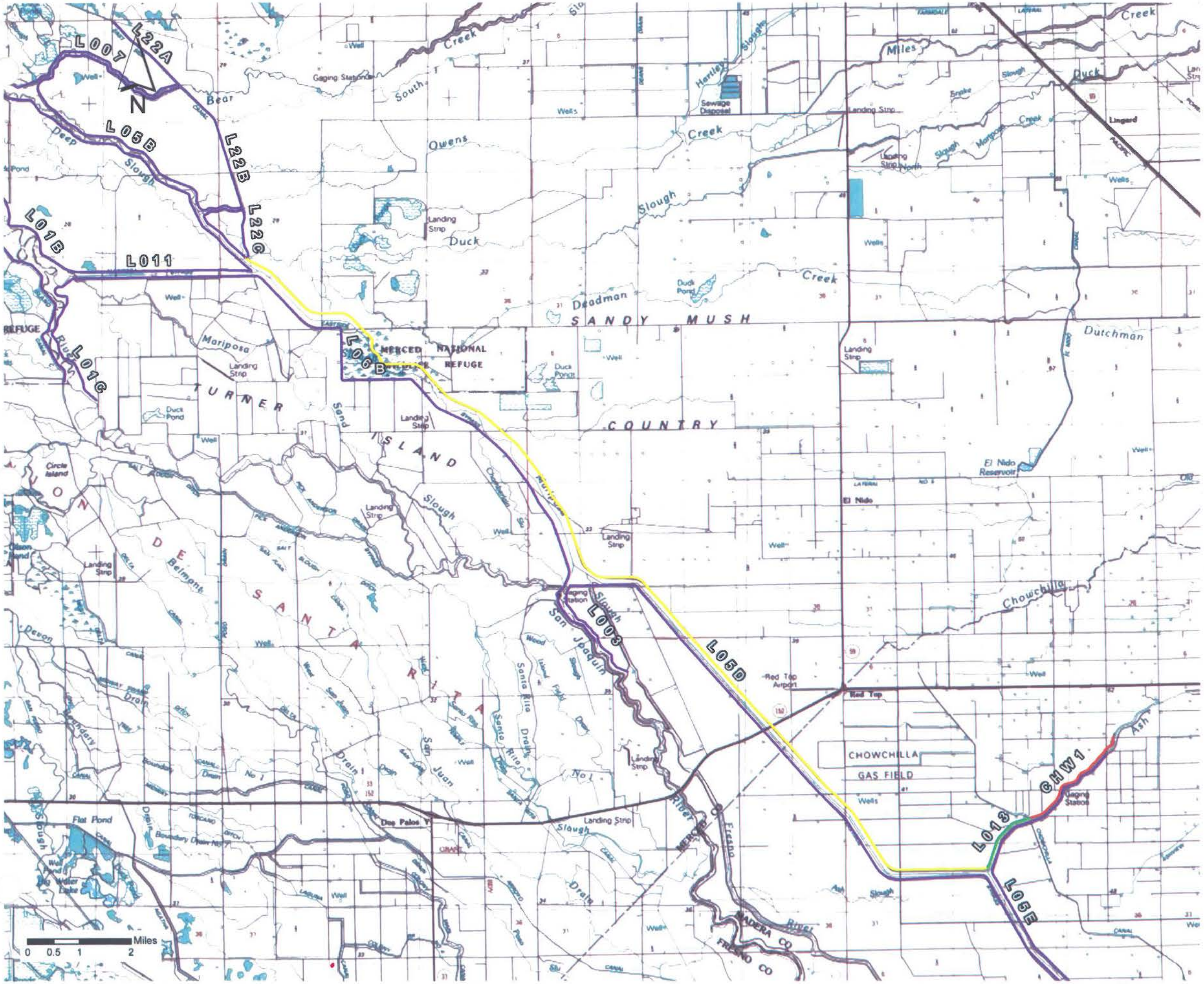
🟨 Not Likely to Prevent Performance In Next Flood Event/Active

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

8/4/2012



Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- Project Levees
- Chowchilla River - Ash Slough right bank
- Lower San Joaquin LD - Unit 13, Ash Slough right bank
- Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN LEVEE DISTRICT
System - Units 5 and 13
Ash Slough Right Bank

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

ENCL 2

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Chowchilla River - Ash Slough right bank/LSJLD-Units 5 and 13 - Ash Slough right bank

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: 10/24/2011 - 10/25/2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______   Date of ITR: ______

Final Approval By: ______   Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Depressions/ Rutting		M	Rutting on land side slope, less than six inches deep. : repair rutting	37.067290 ° -120.398810 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Stand pipe at the LS toe filled with sediment. Unknown if pipe crossing at this location, no pipe found on WS. : confirm permit status and investigate	37.065690 ° -120.400670 °	0.000000 ° 0.000000 °	0004 Y
3			Levee Embankments	Encroachments		U	Standpipe at WS toe. : confirm permit status	37.065270 ° -120.401160 °	0.000000 ° 0.000000 °	0005 Y
4			Levee Embankments	Encroachments		U	Utility pole at WS slope. : Confirm permit status	37.065240 ° -120.401140 °	0.000000 ° 0.000000 °	0006 Y
5			Levee Embankments	Depressions/ Rutting		M	Rutting less than 6" on LS slope. : repair rutting	37.062160 ° -120.404590 °	0.000000 ° 0.000000 °	0007 Y
6			Levee Embankments	Encroachments		U	Utility pole on LS slope, lines cross over crown. : Confirm permit status	37.061400 ° -120.405550 °	0.000000 ° 0.000000 °	0008 Y
7			Levee Embankments	Animal Control		M	Rodent holes on LS slope as deep as 6 feet. : control rodents and fill holes	37.060360 ° -120.406770 °	0.000000 ° 0.000000 °	0009 Y
8			Levee Embankments	Animal Control		U	Rodent holes on LS slope near bait station. Rodent hole 1.5' high, 6' long. : Control rodents and repair holes.	37.060030 ° -120.407050 °	0.000000 ° 0.000000 °	0010 Y
9			Levee Embankments	Encroachments		U	Drip irrigation lines on LS slope. : Remove irrigation lines. These lines are at this one location only.	37.059980 ° -120.407090 °	0.000000 ° 0.000000 °	0011 Y
10			Levee Embankments	Depressions/ Rutting		U	Rutting on LS slope, More than 6" deep. : Repair rutting and control traffic on slopes.	37.058490 ° -120.410470 °	0.000000 ° 0.000000 °	0012 Y
11			Levee Embankments	Encroachments		U	Toe cut on WS slope, 9" vertical base. : Repair toe cut.	37.058330 ° -120.410510 °	0.000000 ° 0.000000 °	0013 Y
12			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slopes. : Control rodents and fill holes.	37.058240 ° -120.410600 °	0.000000 ° 0.000000 °	0014 Y
13			Levee Embankments	Encroachments		U	Toe cut on WS slope, 1.5' vertical base. : Repair toe cut. Restore slope.	37.057500 ° -120.411120 °	0.000000 ° 0.000000 °	0015 Y
14			Levee Embankments	Animal Control		M	Rodent holes on WS slope, 7.5' deep. : Control rodents and fill holes.	37.055730 ° -120.415290 °	0.000000 ° 0.000000 °	0016 Y
15			Levee Embankments	Depressions/ Rutting		M	Rutting and traffic on LS slope, less than 6". : Repair rutting and control traffic.	37.054750 ° -120.417200 °	37.068940 ° -120.398890 °	0019 Y
16			Levee Embankments	Unwanted Vegetation Growth		U	Trees on LS slope. : NA	37.054370 ° -120.417070 °	0.000000 ° 0.000000 °	0020 Y
17			Levee Embankments	Encroachments		U	Utility poles and guy wire on LS slope. : Confirm permit.	37.052940 ° -120.417690 °	37.054190 ° -120.417200 °	0021 Y
18			Levee Embankments	Encroachments		U	Pressurized irrigation lines parallel to levee alignment along LS slope. : Confirm permit status or remove from project right of way.	37.053060 ° -120.417690 °	37.054160 ° -120.417350 °	0022
19			Levee Embankments	Encroachments		U	Silos, debris, lumber, garbage at the land side toe. : Remove from project right of way.	37.053120 ° -120.417550 °	0.000000 ° 0.000000 °	0023 Y
20			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on LS slope obscures visibility for inspection. : NA	37.050290 ° -120.420350 °	37.052230 ° -120.418080 °	0024 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW1_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
21			Levee Embankments	Encroachments		U	Landside toe cut, 9" vertical face. : NA	37.050190 ° -120.420350 °	0.000000 ° 0.000000 °	0025 Y
22			Levee Embankments	Animal Control		U	Rodent holes on LS slope, and WS slope, one to two feet deep. : Control rodents and fill holes.	37.047930 ° -120.423040 °	0.000000 ° 0.000000 °	0026 Y
23			Levee Embankments	Encroachments		U	Pipe through the levee for gravity drainage. Flap gate on WS. LS filled with sediment. Large ditch at LS toe for irrigation purposes. Erosion around head wall at LS. : Confirm permit status. Repair erosion.	37.046590 ° -120.427390 °	0.000000 ° 0.000000 °	0027 Y
24			Levee Embankments	Encroachments		U	Utility poles on LS slope. : Confirm permit status.	37.046720 ° -120.427420 °	37.046480 ° -120.427940 °	0029 Y
25			Levee Embankments	Animal Control		U	No rodent control program in place. Rodent holes in levee slopes and crown. : Control rodents and repair holes.	37.046567 ° -120.427465 °	0.000000 ° 0.000000 °	0030

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW1_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on land side slope, less than six inches deep.

USACE_CESPK_CHW1_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.067290 ° -120.398810 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Stand pipe at the LS toe filled with sediment. Unknown if pipe crossing at this location, no pipe found on WS.

USACE_CESPK_CHW1_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.065690 ° -120.400670 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Standpipe at WS toe.

USACE_CESPK_CHW1_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.065270 ° -120.401160 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility pole at WS slope.

USACE_CESPK_CHW1_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.065240 ° -120.401140 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting less than 6" on LS slope.

USACE_CESPK_CHW1_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.062160 ° -120.404590 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility pole on LS slope, lines cross over crown.

USACE_CESPK_CHW1_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.061400 ° -120.405550 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope as deep as 6 feet.

USACE_CESPK_CHW1_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.060360 ° -120.406770 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope as deep as 6 feet.

USACE_CESPK_CHW1_2012_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
37.060360 ° -120.406770 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope near bait station. Rodent hole 1.5' high, 6' long.

USACE_CESPK_CHW1_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.060030 ° -120.407050 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Drip irrigation lines on LS slope.

USACE_CESPK_CHW1_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.059980 ° -120.407090 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on LS slope, More than 6" deep.

USACE_CESPK_CHW1_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.058490 ° -120.410470 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Toe cut on WS slope, 9" vertical base.

USACE_CESPK_CHW1_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.058330 ° -120.410510 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes.

USACE_CESPK_CHW1_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.058240 ° -120.410600 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes.

USACE_CESPK_CHW1_2012_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
37.058240 ° -120.410600 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Toe cut on WS slope, 1.5' vertical base.

USACE_CESPK_CHW1_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.057500 ° -120.411120 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS slope, 7.5' deep.

USACE_CESPK_CHW1_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.055730 ° -120.415290 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting and traffic on LS slope, less than 6".

USACE_CESPK_CHW1_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.054750 ° -120.417200 °	37.068940 ° -120.398890 °
Rating³:	M

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Trees on LS slope.

USACE_CESPK_CHW1_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.054370 ° -120.417070 °	0.000000 ° 0.000000 °
Rating³:	U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility poles and guy wire on LS slope.

USACE_CESPK_CHW1_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.052940 ° -120.417690 °	37.054190 ° -120.417200 °

Rating³: U

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Silos, debris, lumber, garbage at the land side toe.

USACE_CESPK_CHW1_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.053120 ° -120.417550 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Silos, debris, lumber, garbage at the land side toe.

USACE_CESPK_CHW1_2012_a_0023_2.jpg

GPS Latitude/Longitude	
Start	End
37.053120 ° -120.417550 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS slope obscures visibility for inspection.

USACE_CESPK_CHW1_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.050290 ° -120.420350 °	37.052230 ° -120.418080 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Landside toe cut, 9" vertical face.

USACE_CESPK_CHW1_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.050190 ° -120.420350 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope, and WS slope, one to two feet deep.

USACE_CESPK_CHW1_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.047930 ° -120.423040 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through the levee for gravity drainage. Flap gate on WS. LS filled with sediment. Large ditch at LS toe for irrigation purposes. Erosion around head wall at LS.

USACE_CESPK_CHW1_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.046590 ° -120.427390 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through the levee for gravity drainage. Flap gate on WS. LS filled with sediment. Large ditch at LS toe for irrigation purposes. Erosion around head wall at LS.

USACE_CESPK_CHW1_2012_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
37.046590 ° -120.427390 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through the levee for gravity drainage. Flap gate on WS. LS filled with sediment. Large ditch at LS toe for irrigation purposes. Erosion around head wall at LS.

USACE_CESPK_CHW1_2012_a_0027_3.jpg

GPS Latitude/Longitude	
Start	End
37.046590 ° -120.427390 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Chowchilla River - Ash Slough right bank (CHW1)	Right	2.36	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through the levee for gravity drainage. Flap gate on WS. LS filled with sediment. Large ditch at LS toe for irrigation purposes. Erosion around head wall at LS.

USACE_CESPK_CHW1_2012_a_0027_4.jpg

GPS Latitude/Longitude	
Start	End
37.046590 ° -120.427390 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility poles on LS slope.

USACE_CESPK_CHW1_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.046720 ° -120.427420 °	37.046480 ° -120.427940 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough/LSJLD-Units 5 and 13 - Ash Slough right bank

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: 10/24/2011 - 10/25/2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	U	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**M**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Animal Control		U	Rodent holes on both WS and LS slopes. : Control rodents and fill holes.	37.032665 ° -120.443408 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. : Confirm permit status and video Inspect pipe through levee.	37.032585 ° -120.450103 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slope, 6 ft. deep. : Control rodents and fill holes,	37.032642 ° -120.452675 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Animal Control		M	Rodent holes on crown and LS slope. : Control rodents and fill holes.	37.032655 ° -120.463692 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Animal Control		U	Rodent holes WS and LS slope. 6 ft deep. : Control rodents and fill holes.	37.032650 ° -120.465822 °	0.000000 ° 0.000000 °	0006 Y
6			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit and video investigate pipe through levee.	37.032640 ° -120.467273 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit Status and video inspect pipe through levee.	37.032672 ° -120.473428 °	0.000000 ° 0.000000 °	0009 Y
8			Levee Embankments	Encroachments		U	Gas pipe line through levee, unknown depth. : Confirm permit status,	37.032627 ° -120.473772 °	0.000000 ° 0.000000 °	0010 Y
9			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and Video inspect pipe through levee.	37.032637 ° -120.473840 °	0.000000 ° 0.000000 °	0011 Y
10			Levee Embankments	Sod Cover		M	Slope protection missing on both slopes. Small rills forming. : Encourage sod growth.	37.034550 ° -120.478510 °	0.000000 ° 0.000000 °	0012 Y
11			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.037778 ° -120.481035 °	0.000000 ° 0.000000 °	0013 Y
12			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through level	37.040043 ° -120.482782 °	0.000000 ° 0.000000 °	0014 Y
13			Levee Embankments	Encroachments		U	Pipes through levee for gravity drainage. Flap gate on WS with sediment in front of gate. No positive closure at crown. : Confirm permit status and video inspect pipe through levee. Clean sediment in front of flap gate.	37.047253 ° -120.488230 °	0.000000 ° 0.000000 °	0015 Y
14			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.047423 ° -120.488397 °	0.000000 ° 0.000000 °	0016 Y
15			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit Stratus and video inspect pipe through Levee.	37.051470 ° -120.492615 °	0.000000 ° 0.000000 °	0017 Y
16			Levee Embankments	Encroachments		U	Two pipes through levee, one for gravity drainage and one pressurized. Flap gate on WS. No positive closure at crown for either pipe. Electrical Conduit through levee. : Confirm permit status for drainage pipe and video inspect pipes through levee.	37.054355 ° -120.496197 °	0.000000 ° 0.000000 °	0018 Y
17			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.054892 ° -120.496825 °	0.000000 ° 0.000000 °	0020 Y
18			Levee Embankments	Animal Control		M	Rodent holes in crown. : Control rodents and fill holes.	37.058033 ° -120.500513 °	0.000000 ° 0.000000 °	0021 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Project Maintainer:

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
19			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video Inspect pipe through Levee.	37.058670 ° -120.501205 °	0.000000 ° 0.000000 °	0022 Y
20			Levee Embankments	Animal Control		U	Rodent holes on LS, WS slope and crown. 3' deep : Control rodents and fill holes.	37.059388 ° -120.502010 °	0.000000 ° 0.000000 °	0023 Y
21			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.061762 ° -120.504463 °	0.000000 ° 0.000000 °	0024 Y
22			Levee Embankments	Encroachments		U	Damage from cattle grazing WS slope. 6" vertical face. : Restore slope.	37.062505 ° -120.505343 °	0.000000 ° 0.000000 °	0025 Y
23			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : confirm permit status and video inspect pipe through levee.	37.064310 ° -120.507258 °	0.000000 ° 0.000000 °	0026 Y
24			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.067692 ° -120.510923 °	0.000000 ° 0.000000 °	0027 Y
25			Levee Embankments	Encroachments		U	Pipe through levee. Pump on WS. Siphon breaker on LS hinge. Electrical conduit through levee. . : video inspect pipe through levee.	37.069043 ° -120.512368 °	0.000000 ° 0.000000 °	0028 Y
26			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.073042 ° -120.516685 °	0.000000 ° 0.000000 °	0029 Y
27			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS is held closed with lumber. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.073903 ° -120.517662 °	0.000000 ° 0.000000 °	0030 Y
28			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit Status and video inspect pipe through Levee.	37.075385 ° -120.519405 °	0.000000 ° 0.000000 °	0031 Y
29			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through Levee.	37.076812 ° -120.521102 °	0.000000 ° 0.000000 °	0032 Y
30			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through Levee.	37.080458 ° -120.525168 °	0.000000 ° 0.000000 °	0033 Y
31			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.083417 ° -120.528362 °	0.000000 ° 0.000000 °	0034 Y
32			Levee Embankments	Encroachments		U	Cattle trail on WS slope. 9" vertical face. : Restore slope.	37.083358 ° -120.528343 °	0.000000 ° 0.000000 °	0035 Y
33			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.087085 ° -120.532323 °	0.000000 ° 0.000000 °	0036 Y
34			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : confirm permit status and video Inspect pipe through levee.	37.087457 ° -120.532760 °	0.000000 ° 0.000000 °	0037 Y
35			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video 1nspect pipe through levee.	37.091710 ° -120.537358 °	0.000000 ° 0.000000 °	0038 Y

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Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

Index¹	Levee Mile Start	Levee Mile End	Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude Start	GPS Latitude/Longitude End	Issue No. ⁴ Photo ⁵
36			Levee Embankments	Encroachments		U	Cattle trail on WS slope. : Restore slope.	37.091040 ° -120.536760 °	37.087310 ° -120.532880 °	0039 Y
37			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.095625 ° -120.541585 °	0.000000 ° 0.000000 °	0040 Y
38			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.100903 ° -120.547262 °	0.000000 ° 0.000000 °	0041 Y
39			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.105468 ° -120.551845 °	0.000000 ° 0.000000 °	0042 Y
40			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit Status and video inspect pipe through levee.	37.107015 ° -120.553395 °	0.000000 ° 0.000000 °	0043 Y
41			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and ndeo inspect pipe through levee.	37.108422 ° -120.554933 °	0.000000 ° 0.000000 °	0044 Y
42			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video Inspect pipe through levee.	37.109275 ° -120.555907 °	0.000000 ° 0.000000 °	0045 Y
43			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown. : Confirm permit status and video inspect pipe through levee.	37.112927 ° -120.559743 °	0.000000 ° 0.000000 °	0046 Y
44			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on LS obscures visibility for inspection. : NA	37.033900 ° -120.443670 °	37.073010 ° -120.512370 °	0047 Y
45			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.113458 ° -120.560375 °	0.000000 ° 0.000000 °	0048 Y
46			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through Levee.	37.115467 ° -120.565088 °	0.000000 ° 0.000000 °	0049 Y
47			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.115448 ° -120.565507 °	0.000000 ° 0.000000 °	0050 Y
48			Levee Embankments	Animal Control		U	Rodent holes on WS, LS and crown. : Control rodents and fill holes.	37.115492 ° -120.565640 °	0.000000 ° 0.000000 °	0051 Y
49			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.115462 ° -120.573665 °	0.000000 ° 0.000000 °	0052 Y
50			Levee Embankments	Animal Control		U	Rodent holes on crown and LS slope. 3' deep. : Control rodents and fill holes.	37.115650 ° -120.576158 °	0.000000 ° 0.000000 °	0053 Y
51			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and Video inspect pipe through Levee.	37.120355 ° -120.582087 °	0.000000 ° 0.000000 °	0055 Y
52			Levee Embankments	Encroachments		U	Pipe through levee. Slide gate accessible on LS slope. Erosion on LS bank around head wall. Pipe does not daylight on water side. : Video inspect pipe through levee,	37.120375 ° -120.582107 °	0.000000 ° 0.000000 °	0056 Y
53			Levee Embankments	Animal Control		U	Rodent holes on LS and WS slopes at least 3 ft. deep. : Control rodents and fill holes.	37.120365 ° -120.582073 °	0.000000 ° 0.000000 °	0057 Y

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Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
54			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm pipe permit status and video inspect pipe through levee	37.127752 ° -120.585208 °	0.000000 ° 0.000000 °	0058 Y
55			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pope through level.	37.132127 ° -120.587080 °	0.000000 ° 0.000000 °	0059 Y
56			Levee Embankments	Encroachments		U	Cattle trail on WS slope, 2 foot vertical face. : Restore slope.	37.132223 ° -120.587120 °	0.000000 ° 0.000000 °	0060 Y
57			Levee Embankments	Erosion/ Bank Caving		U	Erosion of WS slope. Deeper than one ft. Appears to be location of recent high water mark and high concentration of rodent holes. : Restore slope.	37.136500 ° -120.590460 °	0.000000 ° 0.000000 °	0061 Y
58			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.138728 ° -120.592378 °	0.000000 ° 0.000000 °	0062 Y
59			Levee Embankments	Encroachments		U	Cattle trail on WS slope, 2 ft. vertical face. 60 ft long. : Restore slope.	37.138762 ° -120.592373 °	0.000000 ° 0.000000 °	0063 Y
60			Levee Embankments	Erosion/ Bank Caving		M	Erosion on WS slope. Appears to be caused by recent high water level. Less than one ft. vertical face. : Restore slope.	37.143990 ° -120.595790 °	37.149390 ° -120.601000 °	0065 Y
61			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate indicated by levee log at WS, Opening submerged. Flap gate appears to be working. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.149345 ° -120.600878 °	0.000000 ° 0.000000 °	0066 Y
62			Levee Embankments	Encroachments		U	Pipe through levee. Slide gate at waterside hinge. No flap gate on WS. Pipe for gravity drainage. : Confirm permit status and video inspect pipe through levee.	37.149788 ° -120.600962 °	0.000000 ° 0.000000 °	0067 Y
63			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Both sides submerged but flap gate appears to be working. : Confirm permit status and video inspect pipe though levee.	37.149792 ° -120.600982 °	0.000000 ° 0.000000 °	0068 Y
64			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspec pipe through levee.	37.156720 ° -120.609367 °	0.000000 ° 0.000000 °	0069 Y
65			Levee Embankments	Encroachments		U	Cattle trail on WS slope, 18 inch vertical face. : Restore slope.	37.156828 ° -120.609518 °	0.000000 ° 0.000000 °	0070 Y
66			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on the LS has been modified to create a weir to pond water on LS of levee. . : Confirm permit status and video inspect pipe through levee.	37.162748 ° -120.618508 °	0.000000 ° 0.000000 °	0071 Y
67			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on LS has been modified to pond water on LS of levee. : Confirm permit status and video inspect pipe through levee.	37.166808 ° -120.628308 °	0.000000 ° 0.000000 °	0073 Y
68			Levee Embankments	Encroachments		U	Three pipes through levee. One pipe for gravity drainage. Slide gate on LS but no flap gate on WS. No positive closure on crown. Second pipe is pressurized with siphon breaker at LS slope. Electrical conduit through levee. Third pipe through levee. : Confirm permit status and video inspect pipe through levee. Investigate drainage pipe and confirm positive closure for all pipes.	37.168107 ° -120.629783 °	0.000000 ° 0.000000 °	0074 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05D_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

Index¹	Levee Mile Start	Levee Mile End	Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude Start	GPS Latitude/Longitude End	Issue No. ⁴ Photo ⁵
69			Levee Embankments	Unwanted Vegetation Growth		U	Trees greater than 2 inch diameter on LS of levee within ten feet of toe. . : NA	37.169870 ° -120.631350 °	37.174730 ° -120.636310 °	0075 Y
70			Levee Embankments	Encroachments		U	Pipe through levee. Pipe for gravity drainage. No positive closure on crown. Erosion of upstream side of the head wall on WS. Debris preventing the flap gate from closing on WS. : Confirm permit status and video inspect pipe through levee. Remove debris and repair erosion.	37.171558 ° -120.633342 °	0.000000 ° 0.000000 °	0076 Y
71			Levee Embankments	Unwanted Vegetation Growth		U	Trees greater than 2 inch in diameter within ten ft of LS toe. : NA	37.175380 ° -120.637570 °	37.175980 ° -120.642100 °	0077
72			Levee Embankments	Animal Control		U	Rodent holes on both LS and WS slopes, 3 ft. deep. : Control rodents and fill holes.	37.175202 ° -120.637777 °	0.000000 ° 0.000000 °	0078 Y
73			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.175812 ° -120.640807 °	0.000000 ° 0.000000 °	0079 Y
74			Levee Embankments	Animal Control		U	Rodent holes on LS slope next to head wall. 13 ft. deep. : Control rodents and fill holes.	37.175815 ° -120.640883 °	0.000000 ° 0.000000 °	0080 Y
75			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.176005 ° -120.649913 °	0.000000 ° 0.000000 °	0081 Y
76			Levee Embankments	Unwanted Vegetation Growth		U	Tree on LS slope. : NA	37.176038 ° -120.649887 °	0.000000 ° 0.000000 °	0082 Y
77			Levee Embankments	Animal Control		M	Rodent holes on LS slope. : Control rodents and all hotel.	37.177220 ° -120.651073 °	0.000000 ° 0.000000 °	0083 Y
78			Flood Damage Reduction Channels	Encroachments		M	Steel and concrete weir in channel. : Confirm permit status.	37.177610 ° -120.651282 °	0.000000 ° 0.000000 °	0084 Y
79			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through level	37.180325 ° -120.653948 °	0.000000 ° 0.000000 °	0085 Y
80			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. : Confirm permit status and video inspect pipe through levee.	37.184868 ° -120.655967 °	0.000000 ° 0.000000 °	0086 Y
81			Levee Embankments	Encroachments		U	Pipe through levee. Siphon breaker on LS hinge. No flap gate at WS. Pumps on LS. : Confirm permit status and video inspect pipe through levee.	37.185970 ° -120.657295 °	0.000000 ° 0.000000 °	0087 Y
82			Levee Embankments	Encroachments		U	Two 48 inch pipes through levee for gravity drainage. Slide gates accessible from crown. Stairs and hand rail on LS slope. : Confirm permit status and video inspect pipes through levee.	37.186510 ° -120.657905 °	0.000000 ° 0.000000 °	0088 Y
83			Levee Embankments	Encroachments		U	Couches on LS slope. : Remove couches.	37.186460 ° -120.657843 °	0.000000 ° 0.000000 °	0089 Y
84			Levee Embankments	Encroachments		U	Pipe through levee. Concrete riser on WS hinge. Pipe appears to cross under channel. No positive closure accessible from the crown. : Confirm permit status and video inspect pipe through levee.	37.191002 ° -120.674820 °	0.000000 ° 0.000000 °	0090 Y
85			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Slide gate on WS slope accessible from crown. : Confirm permit status and video inspect through levee.	37.194772 ° -120.680105 °	0.000000 ° 0.000000 °	0091 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05D_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
86			Levee Embankments	Encroachments		M	Ditch at LS toe. Currently full of water. : NA	37.202640 ° -120.689650 °	37.186940 ° -120.657870 °	0092
87			Levee Embankments	Animal Control		M	Rodent holes on WS slope. : Control rodents and fill holes.	37.201565 ° -120.688040 °	0.000000 ° 0.000000 °	0093 Y
88			Levee Embankments	Encroachments		U	Pipe through levee for gravity drainage. Slide gate on WS slope accessible from the crown. No flap gate. : Confirm permit status and video inspect pipe though levee.	37.202750 ° -120.690033 °	0.000000 ° 0.000000 °	0094 Y
89			Levee Embankments	Animal Control		U	Rodent holes WS slope roughly 2 ft. across. : Control rodents and fill holes,	37.202707 ° -120.690023 °	0.000000 ° 0.000000 °	0095 Y
90			Levee Embankments	Encroachments		U	Gauging station on WS of levee. Gang way to station on WS slope. : Confirm permit status.	37.204580 ° -120.694292 °	0.000000 ° 0.000000 °	0096 Y
91			Levee Embankments	Encroachments		U	Pipe through levee crosses under channel. Pipe for gravity drainage. No positive closure on crown. Solar panel on LS toe. : Confirm permit status and video inspect pipe through levee.	37.205213 ° -120.695838 °	0.000000 ° 0.000000 °	0097 Y
92			Levee Embankments	Encroachments		U	Two concrete culverts through levee. Slide gates on LS hinge accessible from crown. No flap gates. Culverts for gravity drainage. : Confirm permit status and video inspect pipe through levee.	37.205783 ° -120.696850 °	0.000000 ° 0.000000 °	0098 Y
93			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on LS and WS slopes obscure visibility for inspection. : NA	37.121680 ° -120.582430 °	37.168290 ° -120.628750 °	0099 Y
94			Levee Embankments	Animal Control		U	Rodent holes on both LS and WS slopes. : Control rodents and fill holes.	37.201765 ° -120.688382 °	0.000000 ° 0.000000 °	0100 Y
95			Levee Embankments	Animal Control		U	Rodent control program not effective. Rodent holes in the levee slopes and crown. : Control rodents and fill holes.	37.205874 ° -120.696945 °	0.000000 ° 0.000000 °	0101

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05D_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both WS and LS slopes.

USACE_CESPK_L05D_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.032665 ° -120.443408 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both WS and LS slopes.

USACE_CESPK_L05D_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.032665 ° -120.443408 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05D_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.032585 ° -120.450103 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05D_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.032585 ° -120.450103 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slope, 6 ft. deep.

USACE_CESPK_L05D_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.032642 ° -120.452675 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slope, 6 ft. deep.

USACE_CESPK_L05D_2012_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
37.032642 ° -120.452675 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on crown and LS slope.

USACE_CESPK_L05D_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.032655 ° -120.463692 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on crown and LS slope.

USACE_CESPK_L05D_2012_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
37.032655 ° -120.463692 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes WS and LS slope. 6 ft deep.

USACE_CESPK_L05D_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.032650 ° -120.465822 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes WS and LS slope. 6 ft deep.

USACE_CESPK_L05D_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.032650 ° -120.465822 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.032640 ° -120.467273 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.032640 ° -120.467273 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.032672 ° -120.473428 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
37.032672 ° -120.473428 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Gas pipe line through levee, unknown depth.

USACE_CESPK_L05D_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.032627 ° -120.473772 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.032637 ° -120.473840 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.032637 ° -120.473840 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Sod Cover

Remarks: Slope protection missing on both slopes. Small rills forming.

USACE_CESPK_L05D_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.034550 ° -120.478510 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Sod Cover

Remarks: Slope protection missing on both slopes. Small rills forming.

USACE_CESPK_L05D_2012_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.034550 ° -120.478510 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.037778 ° -120.481035 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
37.037778 ° -120.481035 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.040043 ° -120.482782 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
37.040043 ° -120.482782 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipes through levee for gravity drainage. Flap gate on WS with sediment in front of gate. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.047253 ° -120.488230 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipes through levee for gravity drainage. Flap gate on WS with sediment in front of gate. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
37.047253 ° -120.488230 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.047423 ° -120.488397 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
37.047423 ° -120.488397 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.051470 ° -120.492615 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.051470 ° -120.492615 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two pipes through levee, one for gravity drainage and one pressurized. Flap gate on WS. No positive closure at crown for either pipe. Electrical Conduit through levee.

USACE_CESPK_L05D_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.054355 ° -120.496197 °	0.000000 ° 0.000000 °
Rating³: U	

16 inch pipe permit 12873

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two pipes through levee, one for gravity drainage and one pressurized. Flap gate on WS. No positive closure at crown for either pipe. Electrical Conduit through levee.

USACE_CESPK_L05D_2012_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.054355 ° -120.496197 °	0.000000 ° 0.000000 °

Rating³: U

16 inch pipe permit 12873

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.054892 ° -120.496825 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
37.054892 ° -120.496825 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes in crown.

USACE_CESPK_L05D_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.058033 ° -120.500513 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes in crown.

USACE_CESPK_L05D_2012_a_0021_2.jpg

GPS Latitude/Longitude	
Start	End
37.058033 ° -120.500513 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.058670 ° -120.501205 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0022_2.jpg

GPS Latitude/Longitude	
Start	End
37.058670 ° -120.501205 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS, WS slope and crown. 3' deep

USACE_CESPK_L05D_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
37.059388 ° -120.502010 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.061762 ° -120.504463 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0024_2.jpg

GPS Latitude/Longitude	
Start	End
37.061762 ° -120.504463 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Damage from cattle grazing WS slope. 6" vertical face.

USACE_CESPK_L05D_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.062505 ° -120.505343 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
37.064310 ° -120.507258 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
37.064310 ° -120.507258 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
37.067692 ° -120.510923 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
37.067692 ° -120.510923 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Pump on WS. Siphon breaker on LS hinge. Electrical conduit through levee. .

USACE_CESPK_L05D_2012_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
37.069043 ° -120.512368 °	0.000000 ° 0.000000 °

Rating³: U

Permit number 13829

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Pump on WS. Siphon breaker on LS hinge. Electrical conduit through levee. .

USACE_CESPK_L05D_2012_a_0028_2.jpg

GPS Latitude/Longitude	
Start	End
37.069043 ° -120.512368 °	0.000000 ° 0.000000 °

Rating³: U

Permit number 13829

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
37.073042 ° -120.516685 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0029_2.jpg

GPS Latitude/Longitude	
Start	End
37.073042 ° -120.516685 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS is held closed with lumber. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
37.073903 ° -120.517662 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS is held closed with lumber. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0030_2.jpg

GPS Latitude/Longitude	
Start	End
37.073903 ° -120.517662 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
37.075385 ° -120.519405 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0031_2.jpg

GPS Latitude/Longitude	
Start	End
37.075385 ° -120.519405 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
37.076812 ° -120.521102 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

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Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0032_2.jpg

GPS Latitude/Longitude	
Start	End
37.076812 ° -120.521102 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
37.080458 ° -120.525168 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0033_2.jpg

GPS Latitude/Longitude	
Start	End
37.080458 ° -120.525168 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
37.083417 ° -120.528362 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0034_2.jpg

GPS Latitude/Longitude	
Start	End
37.083417 ° -120.528362 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on WS slope. 9" vertical face.

USACE_CESPK_L05D_2012_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
37.083358 ° -120.528343 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
37.087085 ° -120.532323 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0036_2.jpg

GPS Latitude/Longitude	
Start	End
37.087085 ° -120.532323 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
37.087457 ° -120.532760 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0037_2.jpg

GPS Latitude/Longitude	
Start	End
37.087457 ° -120.532760 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
37.091710 ° -120.537358 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0038_2.jpg

GPS Latitude/Longitude	
Start	End
37.091710 ° -120.537358 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0039
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on WS slope.

USACE_CESPK_L05D_2012_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
37.091040 ° -120.536760 °	37.087310 ° -120.532880 °

Rating[3]: U

LIS Issue Number[1]	0040
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
37.095625 ° -120.541585 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0040
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0040_2.jpg

GPS Latitude/Longitude	
Start	End
37.095625 ° -120.541585 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
37.100903 ° -120.547262 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
37.100903 ° -120.547262 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
37.105468 ° -120.551845 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0042_2.jpg

GPS Latitude/Longitude	
Start	End
37.105468 ° -120.551845 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
37.107015 ° -120.553395 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0043_2.jpg

GPS Latitude/Longitude	
Start	End
37.107015 ° -120.553395 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.
² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
37.108422 ° -120.554933 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0044_2.jpg

GPS Latitude/Longitude	
Start	End
37.108422 ° -120.554933 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
37.109275 ° -120.555907 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0045_2.jpg

GPS Latitude/Longitude	
Start	End
37.109275 ° -120.555907 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
37.112927 ° -120.559743 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Flap gate on WS. No positive closure at crown.

USACE_CESPK_L05D_2012_a_0046_2.jpg

GPS Latitude/Longitude	
Start	End
37.112927 ° -120.559743 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS obscures visibility for inspection.

USACE_CESPK_L05D_2012_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
37.033900 ° -120.443670 °	37.073010 ° -120.512370 °
Rating³: U	

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS obscures visibility for inspection.

USACE_CESPK_L05D_2012_a_0047_2.jpg

GPS Latitude/Longitude	
Start	End
37.033900 ° -120.443670 °	37.073010 ° -120.512370 °
Rating³: U	

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
37.113458 ° -120.560375 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0048_2.jpg

GPS Latitude/Longitude	
Start	End
37.113458 ° -120.560375 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
37.115467 ° -120.565088 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0049_2.jpg

GPS Latitude/Longitude	
Start	End
37.115467 ° -120.565088 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
37.115448 ° -120.565507 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS, LS and crown.

USACE_CESPK_L05D_2012_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
37.115492 ° -120.565640 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0052
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
37.115462 ° -120.573665 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0052
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0052_2.jpg

GPS Latitude/Longitude	
Start	End
37.115462 ° -120.573665 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0053
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on crown and LS slope. 3' deep.

USACE_CESPK_L05D_2012_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
37.115650 ° -120.576158 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0053
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on crown and LS slope. 3' deep.

USACE_CESPK_L05D_2012_a_0053_2.jpg

GPS Latitude/Longitude	
Start	End
37.115650 ° -120.576158 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
37.120355 ° -120.582087 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0055_2.jpg

GPS Latitude/Longitude	
Start	End
37.120355 ° -120.582087 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Slide gate accessible on LS slope. Erosion on LS bank around head wall. Pipe does not daylight on water side.

USACE_CESPK_L05D_2012_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
37.120375 ° -120.582107 °	0.000000 ° 0.000000 °
Rating³: U	

permit number 3040

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Slide gate accessible on LS slope. Erosion on LS bank around head wall. Pipe does not daylight on water side.

USACE_CESPK_L05D_2012_a_0056_2.jpg

GPS Latitude/Longitude	
Start	End
37.120375 ° -120.582107 °	0.000000 ° 0.000000 °
Rating³: U	

permit number 3040

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and WS slopes at least 3 ft. deep.

USACE_CESPK_L05D_2012_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
37.120365 ° -120.582073 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
37.127752 ° -120.585208 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0058_2.jpg

GPS Latitude/Longitude	
Start	End
37.127752 ° -120.585208 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
37.132127 ° -120.587080 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0059_2.jpg

GPS Latitude/Longitude	
Start	End
37.132127 ° -120.587080 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0060
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on WS slope, 2 foot vertical face.

USACE_CESPK_L05D_2012_a_0060_1.jpg

GPS Latitude/Longitude	
Start	End
37.132223 ° -120.587120 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0061
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope. Deeper than one ft. Appears to be location of recent high water mark and high concentration of rodent holes.

USACE_CESPK_L05D_2012_a_0061_1.jpg

GPS Latitude/Longitude	
Start	End
37.136500 ° -120.590460 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0061
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion of WS slope. Deeper than one ft. Appears to be location of recent high water mark and high concentration of rodent holes.

USACE_CESPK_L05D_2012_a_0061_2.jpg

GPS Latitude/Longitude	
Start	End
37.136500 ° -120.590460 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
37.138728 ° -120.592378 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on WS slope, 2 ft. vertical face. 60 ft long.

USACE_CESPK_L05D_2012_a_0063_1.jpg

GPS Latitude/Longitude	
Start	End
37.138762 ° -120.592373 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0065
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion on WS slope. Appears to be caused by recent high water level. Less than one ft. vertical face.

USACE_CESPK_L05D_2012_a_0065_1.jpg

GPS Latitude/Longitude	
Start	End
37.143990 ° -120.595790 °	37.149390 ° -120.601000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate indicated by levee log at WS, Opening submerged. Flap gate appears to be working. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0066_1.jpg

GPS Latitude/Longitude	
Start	End
37.149345 ° -120.600878 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Slide gate at waterside hinge. No flap gate on WS. Pipe for gravity drainage.

USACE_CESPK_L05D_2012_a_0067_1.jpg

GPS Latitude/Longitude	
Start	End
37.149788 ° -120.600962 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Slide gate at waterside hinge. No flap gate on WS. Pipe for gravity drainage.

USACE_CESPK_L05D_2012_a_0067_2.jpg

GPS Latitude/Longitude	
Start	End
37.149788 ° -120.600962 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Slide gate at waterside hinge. No flap gate on WS. Pipe for gravity drainage.

USACE_CESPK_L05D_2012_a_0067_3.jpg

GPS Latitude/Longitude	
Start	End
37.149788 ° -120.600962 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Both sides submerged but flap gate appears to be working.

USACE_CESPK_L05D_2012_a_0068_1.jpg

GPS Latitude/Longitude	
Start	End
37.149792 ° -120.600982 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Both sides submerged but flap gate appears to be working.

USACE_CESPK_L05D_2012_a_0068_2.jpg

GPS Latitude/Longitude	
Start	End
37.149792 ° -120.600982 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0069_1.jpg

GPS Latitude/Longitude	
Start	End
37.156720 ° -120.609367 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cattle trail on WS slope, 18 inch vertical face.

USACE_CESPK_L05D_2012_a_0070_1.jpg

GPS Latitude/Longitude	
Start	End
37.156828 ° -120.609518 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on the LS has been modified to create a weir to pond water on LS of levee. .

USACE_CESPK_L05D_2012_a_0071_1.jpg

GPS Latitude/Longitude	
Start	End
37.162748 ° -120.618508 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on the LS has been modified to create a weir to pond water on LS of levee. .

USACE_CESPK_L05D_2012_a_0071_2.jpg

GPS Latitude/Longitude	
Start	End
37.162748 ° -120.618508 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0073
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on LS has been modified to pond water on LS of levee.

USACE_CESPK_L05D_2012_a_0073_1.jpg

GPS Latitude/Longitude	
Start	End
37.166808 ° -120.628308 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0073
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown. Head wall on LS has been modified to pond water on LS of levee.

USACE_CESPK_L05D_2012_a_0073_2.jpg

GPS Latitude/Longitude	
Start	End
37.166808 ° -120.628308 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0074
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Three pipes through levee. One pipe for gravity drainage. Slide gate on LS but no flap gate on WS. No positive closure on crown. Second pipe is pressurized with siphon breaker at LS slope. Electrical conduit through levee. Third pipe through levee.

USACE_CESPK_L05D_2012_a_0074_1.jpg

GPS Latitude/Longitude	
Start	End
37.168107 ° -120.629783 °	0.000000 ° 0.000000 °

Rating[3]: U

Third pipe unknown where it day lights on LS. Pressurized line running parallel to the levee alignment along WS toe.

LIS Issue Number[1]	0074
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Three pipes through levee. One pipe for gravity drainage. Slide gate on LS but no flap gate on WS. No positive closure on crown. Second pipe is pressurized with siphon breaker at LS slope. Electrical conduit through levee. Third pipe through levee.

USACE_CESPK_L05D_2012_a_0074_2.jpg

GPS Latitude/Longitude	
Start	End
37.168107 ° -120.629783 °	0.000000 ° 0.000000 °

Rating[3]: U

Third pipe unknown where it day lights on LS. Pressurized line running parallel to the levee alignment along WS toe.

LIS Issue Number[1]	0074
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Three pipes through levee. One pipe for gravity drainage. Slide gate on LS but no flap gate on WS. No positive closure on crown. Second pipe is pressurized with siphon breaker at LS slope. Electrical conduit through levee. Third pipe through levee.

USACE_CESPK_L05D_2012_a_0074_3.jpg

GPS Latitude/Longitude	
Start	End
37.168107 ° -120.629783 °	0.000000 ° 0.000000 °

Rating[3]: U

Third pipe unknown where it day lights on LS. Pressurized line running parallel to the levee alignment along WS toe.

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0074
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Three pipes through levee. One pipe for gravity drainage. Slide gate on LS but no flap gate on WS. No positive closure on crown. Second pipe is pressurized with siphon breaker at LS slope. Electrical conduit through levee. Third pipe through levee.

USACE_CESPK_L05D_2012_a_0074_4.jpg

GPS Latitude/Longitude	
Start	End
37.168107 ° -120.629783 °	0.000000 ° 0.000000 °
Rating³: U	

Third pipe unknown where it day lights on LS. Pressurized line running parallel to the levee alignment along WS toe.

LIS Issue Number¹	0075
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Trees greater than 2 inch diameter on LS of levee within ten feet of toe. .

USACE_CESPK_L05D_2012_a_0075_1.jpg

GPS Latitude/Longitude	
Start	End
37.169870 ° -120.631350 °	37.174730 ° -120.636310 °
Rating³: U	

LIS Issue Number¹	0076
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Pipe for gravity drainage. No positive closure on crown. Erosion of upstream side of the head wall on WS. Debris preventing the flap gate from closing on WS.

USACE_CESPK_L05D_2012_a_0076_1.jpg

GPS Latitude/Longitude	
Start	End
37.171558 ° -120.633342 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0076
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Pipe for gravity drainage. No positive closure on crown. Erosion of upstream side of the head wall on WS. Debris preventing the flap gate from closing on WS.

USACE_CESPK_L05D_2012_a_0076_2.jpg

GPS Latitude/Longitude	
Start	End
37.171558 ° -120.633342 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both LS and WS slopes, 3 ft. deep.

USACE_CESPK_L05D_2012_a_0078_1.jpg

GPS Latitude/Longitude	
Start	End
37.175202 ° -120.637777 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both LS and WS slopes, 3 ft. deep.

USACE_CESPK_L05D_2012_a_0078_2.jpg

GPS Latitude/Longitude	
Start	End
37.175202 ° -120.637777 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both LS and WS slopes, 3 ft. deep.

USACE_CESPK_L05D_2012_a_0078_3.jpg

GPS Latitude/Longitude	
Start	End
37.175202 ° -120.637777 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0079
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0079_1.jpg

GPS Latitude/Longitude	
Start	End
37.175812 ° -120.640807 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0079
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0079_2.jpg

GPS Latitude/Longitude	
Start	End
37.175812 ° -120.640807 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0080
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control
Remarks: Rodent holes on LS slope next to head wall. 13 ft. deep.	

USACE_CESPK_L05D_2012_a_0080_1.jpg

GPS Latitude/Longitude	
Start	End
37.175815 ° -120.640883 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0081
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.	

USACE_CESPK_L05D_2012_a_0081_1.jpg

GPS Latitude/Longitude	
Start	End
37.176005 ° -120.649913 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0081
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.	

USACE_CESPK_L05D_2012_a_0081_2.jpg

GPS Latitude/Longitude	
Start	End
37.176005 ° -120.649913 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0082
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree on LS slope.

USACE_CESPK_L05D_2012_a_0082_1.jpg

GPS Latitude/Longitude	
Start	End
37.176038 ° -120.649887 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0083
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS slope.

USACE_CESPK_L05D_2012_a_0083_1.jpg

GPS Latitude/Longitude	
Start	End
37.177220 ° -120.651073 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0084
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Steel and concrete weir in channel.

USACE_CESPK_L05D_2012_a_0084_1.jpg

GPS Latitude/Longitude	
Start	End
37.177610 ° -120.651282 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0085
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0085_1.jpg

GPS Latitude/Longitude	
Start	End
37.180325 ° -120.653948 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0085
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0085_2.jpg

GPS Latitude/Longitude	
Start	End
37.180325 ° -120.653948 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0086
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0086_1.jpg

GPS Latitude/Longitude	
Start	End
37.184868 ° -120.655967 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0086
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Flap gate at WS. Pipe for gravity drainage. No positive closure on crown.

USACE_CESPK_L05D_2012_a_0086_2.jpg

GPS Latitude/Longitude	
Start	End
37.184868 ° -120.655967 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0087
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Siphon breaker on LS hinge. No flap gate at WS. Pumps on LS.

USACE_CESPK_L05D_2012_a_0087_1.jpg

GPS Latitude/Longitude	
Start	End
37.185970 ° -120.657295 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0087
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Siphon breaker on LS hinge. No flap gate at WS. Pumps on LS.

USACE_CESPK_L05D_2012_a_0087_2.jpg

GPS Latitude/Longitude	
Start	End
37.185970 ° -120.657295 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number[1]	0087
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Siphon breaker on LS hinge. No flap gate at WS. Pumps on LS.

USACE_CESPK_L05D_2012_a_0087_3.jpg

GPS Latitude/Longitude	
Start	End
37.185970 ° -120.657295 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0088
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two 48 inch pipes through levee for gravity drainage. Slide gates accessible from crown. Stairs and hand rail on LS slope.

USACE_CESPK_L05D_2012_a_0088_1.jpg

GPS Latitude/Longitude	
Start	End
37.186510 ° -120.657905 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0088
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two 48 inch pipes through levee for gravity drainage. Slide gates accessible from crown. Stairs and hand rail on LS slope.

USACE_CESPK_L05D_2012_a_0088_2.jpg

GPS Latitude/Longitude	
Start	End
37.186510 ° -120.657905 °	0.000000 ° 0.000000 °
Rating[3]: U	

---

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0089
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Couches on LS slope.

USACE_CESPK_L05D_2012_a_0089_1.jpg

GPS Latitude/Longitude	
Start	End
37.186460 ° -120.657843 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0090
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Concrete riser on WS hinge. Pipe appears to cross under channel. No positive closure accessible from the crown.

USACE_CESPK_L05D_2012_a_0090_1.jpg

GPS Latitude/Longitude	
Start	End
37.191002 ° -120.674820 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0090
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Concrete riser on WS hinge. Pipe appears to cross under channel. No positive closure accessible from the crown.

USACE_CESPK_L05D_2012_a_0090_2.jpg

GPS Latitude/Longitude	
Start	End
37.191002 ° -120.674820 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0090
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe through levee. Concrete riser on WS hinge. Pipe appears to cross under channel. No positive closure accessible from the crown.	

USACE_CESPK_L05D_2012_a_0090_3.jpg

GPS Latitude/Longitude	
Start	End
37.191002 ° -120.674820 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0091
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe through levee for gravity drainage. Slide gate on WS slope accessible from crown.	

USACE_CESPK_L05D_2012_a_0091_1.jpg

GPS Latitude/Longitude	
Start	End
37.194772 ° -120.680105 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0091
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Remarks: Pipe through levee for gravity drainage. Slide gate on WS slope accessible from crown.	

USACE_CESPK_L05D_2012_a_0091_2.jpg

GPS Latitude/Longitude	
Start	End
37.194772 ° -120.680105 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0093
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on WS slope.

USACE_CESPK_L05D_2012_a_0093_1.jpg

GPS Latitude/Longitude	
Start	End
37.201565 ° -120.688040 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0094
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Slide gate on WS slope accessible from the crown. No flap gate.

USACE_CESPK_L05D_2012_a_0094_1.jpg

GPS Latitude/Longitude	
Start	End
37.202750 ° -120.690033 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0094
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee for gravity drainage. Slide gate on WS slope accessible from the crown. No flap gate.

USACE_CESPK_L05D_2012_a_0094_2.jpg

GPS Latitude/Longitude	
Start	End
37.202750 ° -120.690033 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0095
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes WS slope roughly 2 ft. across.

USACE_CESPK_L05D_2012_a_0095_1.jpg

GPS Latitude/Longitude	
Start	End
37.202707 ° -120.690023 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0096
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Gauging station on WS of levee. Gang way to station on WS slope.

USACE_CESPK_L05D_2012_a_0096_1.jpg

GPS Latitude/Longitude	
Start	End
37.204580 ° -120.694292 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0097
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee crosses under channel. Pipe for gravity drainage. No positive closure on crown. Solar panel on LS toe.

USACE_CESPK_L05D_2012_a_0097_1.jpg

GPS Latitude/Longitude	
Start	End
37.205213 ° -120.695838 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0098
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two concrete culverts through levee. Slide gates on LS hinge accessible from crown. No flap gates. Culverts for gravity drainage.

USACE_CESPK_L05D_2012_a_0098_1.jpg

GPS Latitude/Longitude	
Start	End
37.205783 ° -120.696850 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0098
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two concrete culverts through levee. Slide gates on LS hinge accessible from crown. No flap gates. Culverts for gravity drainage.

USACE_CESPK_L05D_2012_a_0098_2.jpg

GPS Latitude/Longitude	
Start	End
37.205783 ° -120.696850 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_1.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_10.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_2.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_3.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_4.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_5.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_6.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_7.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_8.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

LIS Issue Number¹	0099
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS and WS slopes obscure visibility for inspection.

USACE_CESPK_L05D_2012_a_0099_9.jpg

GPS Latitude/Longitude	
Start	End
37.121680 ° -120.582430 °	37.168290 ° -120.628750 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Ash Slough (L05D)	Right	19.82	USACE	10/24/2011 10/9/2012	Ryan Larson

LIS Issue Number¹	0100
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both LS and WS slopes.

USACE_CESPK_L05D_2012_a_0100_1.jpg

GPS Latitude/Longitude	
Start	End
37.201765 ° -120.688382 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0100
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on both LS and WS slopes.

USACE_CESPK_L05D_2012_a_0100_2.jpg

GPS Latitude/Longitude	
Start	End
37.201765 ° -120.688382 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 13, Ash Slough right bank/LSJLD-Units 5 and 13 - Ash Slough right bank

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: 10/24/2011 - 10/25/2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**A**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**U**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	U	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)	Right	1.34	USACE	10/24/2011 10/24/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		U	Two pipes through the levee. Slide gates on WS slope. Accessible from crown. : Confirm permit status and video inspect pipes through levee.	37.045730 ° -120.430202 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments		U	Concrete lined ditch at LS toe, : Confirm permit status.	37.045990 ° -120.430210 °	37.044920 ° -120.434280 °	0002 Y
3			Levee Embankments	Encroachments		M	Barbed wire fence perpendicular to channel alignment on top of drop structure. : Confirm permit status.	37.037920 ° -120.440345 °	0.000000 ° 0.000000 °	0003 Y
4			Flood Damage Reduction Channels	Foundation of Concrete Structures		U	Large cavity next to RB drop structure wall. Cavity is 8' deep and 12' long laterally along the RB drop structure wall. Unknown width. : Investigate and fill cavity.	37.037757 ° -120.439913 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		M	Barbed wire fence on top of drop structure. : Confirm permit status.	37.033973 ° -120.441987 °	0.000000 ° 0.000000 °	0005 Y
6			Flood Damage Reduction Channels	Foundation of Concrete Structures		U	Erosion along RB drop structure number one, 3' tall. : Repair erosion.	37.033863 ° -120.441565 °	0.000000 ° 0.000000 °	0006 Y
7			Flood Damage Reduction Channels	Erosion		U	Heavy erosion downstream of drop structure number one. : Investigate cause and stabilize channel bed.	37.033957 ° -120.441938 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on LS slope obscures visibility of inspection. : Control vegetation in the levee right-of-way.	37.033880 ° -120.442660 °	37.044020 ° -120.435290 °	0008 Y
9			Levee Embankments	Encroachments		U	No rodent control program in place. Rodent holes in levee slopes and crown.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0009

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L013_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)	Right	1.34	USACE	10/24/2011 10/24/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two pipes through the levee. Slide gates on WS slope. Accessible from crown.

USACE_CESPK_L013_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.045730 ° -120.430202 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Two pipes through the levee. Slide gates on WS slope. Accessible from crown.

USACE_CESPK_L013_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.045730 ° -120.430202 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Concrete lined ditch at LS toe,

USACE_CESPK_L013_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.045990 ° -120.430210 °	37.044920 ° -120.434280 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)	Right	1.34	USACE	10/24/2011 10/24/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence perpendicular to channel alignment on top of drop structure.

USACE_CESPK_L013_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.037920 ° -120.440345 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Remarks: Large cavity next to RB drop structure wall. Cavity is 8' deep and 12' long laterally along the RB drop structure wall. Unknown width.

USACE_CESPK_L013_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.037757 ° -120.439913 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Remarks: Large cavity next to RB drop structure wall. Cavity is 8' deep and 12' long laterally along the RB drop structure wall. Unknown width.

USACE_CESPK_L013_2012_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.037757 ° -120.439913 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)	Right	1.34	USACE	10/24/2011 10/24/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Remarks: Large cavity next to RB drop structure wall. Cavity is 8' deep and 12' long laterally along the RB drop structure wall. Unknown width.

USACE_CESPK_L013_2012_a_0004_3.jpg

GPS Latitude/Longitude	
Start	End
37.037757 ° -120.439913 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Barbed wire fence on top of drop structure.

USACE_CESPK_L013_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.033973 ° -120.441987 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Remarks: Erosion along RB drop structure number one, 3' tall.

USACE_CESPK_L013_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.033863 ° -120.441565 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 13 - Ash Slough right bank Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 13, Ash Slough right bank (L013)	Right	1.34	USACE	10/24/2011 10/24/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Remarks: Heavy erosion downstream of drop structure number one.

USACE_CESPK_L013_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.033957 ° -120.441938 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on LS slope obscures visibility of inspection.

USACE_CESPK_L013_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.033880 ° -120.442660 °	37.044020 ° -120.435290 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

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Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 26 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

On August 31 and September 1, 2011, inspectors Ryan Larson, Bob Murakami, and Gene Vaughan from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5, 14, and 15 - Ash and Berenda Sloughs system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 5 segments:

Segment Name
LSJLD- Unit 5 Eastside Bypass Right Bank Below Berenda Slough (L05E)
LSJLD- Unit 14 Ash Slough Left Bank (L014)
LSJLD- Unit 15 Berenda Slough Right Bank (L015)
Chowchilla River - Ash Slough left bank (CHW2)
Chowchilla River- Berenda Slough Right Bank (CHW3)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
	The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5, 14, and 15 - Ash and Berenda Sloughs system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, sod cover, seepage, and foundation of concrete structures (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are attached showing the observations from the channels portion of the project. Headcutting in the channel of the Eastside Bypass (see inspection ID L05E_2011_a_0014) has caused a pipe in the floodway to daylight. Headcutting has also caused a 40 foot drop in the channel invert within the Eastside Bypass just downstream from Avenue 18 ½. There is an area of headcutting in Ash Slough, just downstream of the drop structure closest to the Chowchilla Canal. In all cases, the channel should be repaired and consideration should be given to additional features that would dissipate energy and reduce future headcutting in the channels.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee inspection reports with photos

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

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Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
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LSJLD- Unit 15 Berenda Slough Right Bank (L015)
Chowchilla River - Ash Slough left bank (CHW2)
Chowchilla River- Berenda Slough Right Bank (CHW3)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
	The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5, 14, and 15 - Ash and Berenda Sloughs system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, sod cover, seepage, and foundation of concrete structures (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are attached showing the observations from the channels portion of the project. Headcutting in the channel of the Eastside Bypass (see inspection ID L05E_2011_a_0014) has caused a pipe in the floodway to daylight. Headcutting has also caused a 40 foot drop in the channel invert within the Eastside Bypass just downstream from Avenue 18 ½. There is an area of headcutting in Ash Slough, just downstream of the drop structure closest to the Chowchilla Canal. In all cases, the channel should be repaired and consideration should be given to additional features that would dissipate energy and reduce future headcutting in the channels.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report card
2) Map
3) Levee inspection reports with photos

CEI 9/1/2011 LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Faustino

Mahoney

Leady

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

SPK NLD

\\spk-netapp1\coopublic\FP&Nav\ICW\!_Inspections_System Folders\
LSJLD-Units 5, 14, and 15 – Ash and Berenda Sloughs \2011 CEI
UI\LSJLD-Units 5, 14, and 15 - 2011.doc

System
LSJLD-Units 5, 14, and 15
Unacceptable - Inactive

		LSJLD- Unit 5 Eastside Bypass Right Bank Below Berenda Slough (L05E)	LSJLD- Unit 14 Ash Slough Left Bank (L014)	LSJLD- Unit 15 Berenda Slough Right Bank (L015)	Chowchilla River - Ash Slough Left Bank (CHW2)	Chowchilla River - Berenda Slough Right Bank (CHW3)				
General	Operations and Maintenance Manuals	A	A	A	A	A				
	Emergency Supplies and Equipment	A	A	A	A	A				
	Flood Preparedness and Training	A	A	A	A	A				
Levee Embankments	Unwanted Vegetation Growth	U	U	U	U	U				
	Sod Cover	U	NA	NA	NA	NA				
	Encroachments	U	U	U	U	U				
	Closure Structures	NA	NA	NA	NA	NA				
	Slope Stability	A	A	A	A	A				
	Erosion/Bank Caving	A	A	A	M	A				
	Settlement	A	A	A	A	A				
	Depressions/Rutting	A	A	A	M	A				
	Cracking	A	A	A	A	A				
	Animal Control	U	U	U	U	U				
	Culverts/Discharge Pipes	NA	NA	NA	NA	NA				
	Riprap Revetments & Bank Protection	NA	NA	NA	NA	NA				
	Revetments other than Riprap	NA	NA	NA	NA	NA				
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA	NA				
	Seepage	A	U	A	A	A				
Flood Damage Reduction Channels	Vegetation and Obstructions	A	U	A	M	U				
	Shoaling	A	M	A	A	A				
	Encroachments	U	U	M	A	A				
	Erosion	U	U	A	A	A				
	Concrete Surfaces	NA	A	NA	NA	NA				
	Tilting, Sliding, or Settlement of Concrete	NA	A	NA	NA	NA				
	Foundation of Concrete Structures	NA	U	NA	NA	NA				
	Slab and Monolith Joints	NA	NA	NA	NA	NA				
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA	NA				
	Riprap Revetments & Banks	NA	NA	NA	NA	NA				
	Revetments other than Riprap	NA	NA	NA	NA	NA				

🟥 Likely Prevents Performance In Next Flood Event/Inactive

🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe

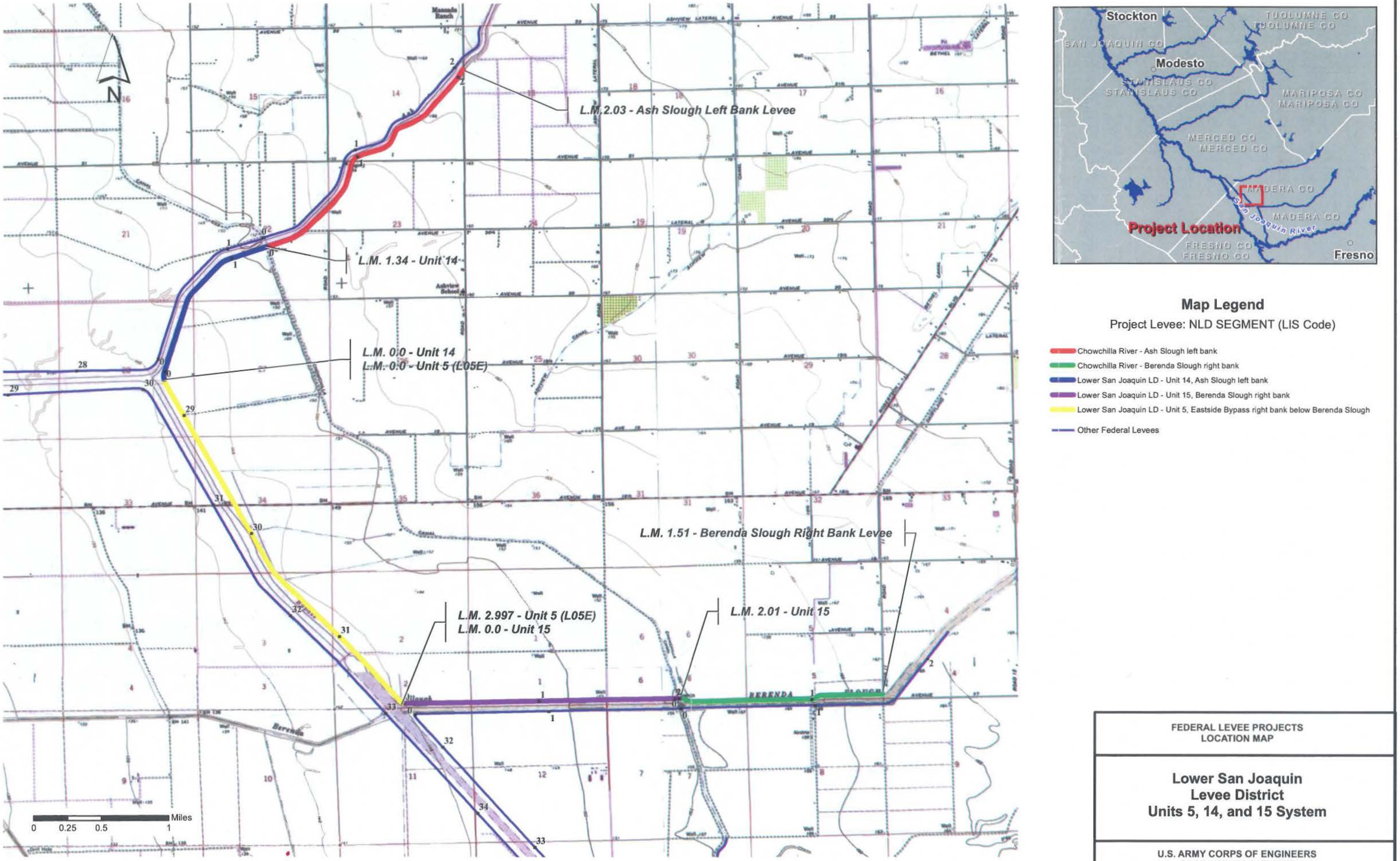
🟨 Not Likely to Prevent Performance In Next Flood Event/Active

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

8/4/2012



FEDERAL LEVEE PROJECTS
LOCATION MAP

**Lower San Joaquin
Levee District
Units 5, 14, and 15 System**

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

encl 2

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough/LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaugha

Date of Inspection: August 31 - September 1, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	**Continuing Eligibility Inspections**	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	**System**	**Segment**
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	**Rural**	**Urban**
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	U	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	U	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	U	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	36.997027 ° -120.410958 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments	LS	U	Cattle grazing the levee. Causing damage to LS slope. : Restore slope.	37.000250 ° -120.414555 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.001737 ° -120.416213 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.004225 ° -120.419137 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Animal Control	OT	M	Small dia rodent holes on WS. 1-2" dia. : Control rodents and fill holes.	37.008518 ° -120.424418 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.014470 ° -120.429713 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.018458 ° -120.432475 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Sod Cover	OT	U	WS slope does not have erosion protection. Could be caused by cattle trail, but grass not growing in this area. Sharp drop off at hinge. : Restore slope and encourage sod cover like rest of levee in area.	37.018550 ° -120.432620 °	37.020300 ° -120.433780 °	0008 Y
9			Levee Embankments	Encroachments	SC	U	Damage from cattle grazing both slopes. Most damage on WS. : Restore slopes from cattle damage.	37.018120 ° -120.432370 °	36.997240 ° -120.411110 °	0009 Y
10			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage Flap gate on WS. : Video inspect pipe thru levee.	37.021480 ° -120.434577 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Encroachments	OT	U	Cattle trail on WS slope. Approx. 10" of material missing from slope. : Restore slope and control cattle.	37.021492 ° -120.434550 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Unwanted Vegetation Growth	LS	U	Green plants on LS at toe. Very thick. Adjacent to 2 standpipes outside of project right of way. Could be an indication of problem with irrigation system. : Trim vegetation and investigate.	37.024778 ° -120.436790 °	0.000000 ° 0.000000 °	0012 Y
13			Flood Damage Reduction Channels	Encroachments	SC	U	Pipe thru levee. Crosses channel. Erosion of channel has exposed pipe. Riprap placed around pipe to prevent head-cutting. Closure devices on LS of levee. Siphon pipe to carry water from 1 side of bypass to other. : Video inspect pipe thru levee.	37.028228 ° -120.439171 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.031588 ° -120.441348 °	0.000000 ° 0.000000 °	0015 Y
15			Levee Embankments	Unwanted Vegetation Growth	CR	U	Thick grasses on both slopes longer than 12". Obscures slopes for inspection. : Trim vegetation.	37.030830 ° -120.440750 °	36.997040 ° -120.411280 °	0016 Y
16			Flood Damage Reduction Channels	Erosion	OT	U	Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet. : Investigate reason for scour.	37.018257 ° -120.433322 °	0.000000 ° 0.000000 °	0017 Y
17			Flood Damage Reduction Channels	Erosion	OT	U	Head cutting at pipe across channel. Pipe used to be buried under invert of channel. : Protect pipe.	37.027866 ° -120.440404 °	0.000000 ° 0.000000 °	0018 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05E_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.997027 ° -120.410958 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle grazing the levee. Causing damage to LS slope.

USACE_CESPK_L05E_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.000250 ° -120.414555 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.001737 ° -120.416213 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.004225 ° -120.419137 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Small dia rodent holes on WS. 1-2" dia.

USACE_CESPK_L05E_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.008518 ° -120.424418 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.014470 ° -120.429713 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.018458 ° -120.432475 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Yellow; Remarks: WS slope does not have erosion protection. Could be caused by cattle trail, but grass not growing in this area. Sharp drop off at hinge.

USACE_CESPK_L05E_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.018550 ° -120.432620 °	37.020300 ° -120.433780 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Damage from cattle grazing both slopes. Most damage on WS.

USACE_CESPK_L05E_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.018120 ° -120.432370 °	36.997240 ° -120.411110 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage Flap gate on WS.

USACE_CESPK_L05E_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.021480 ° -120.434577 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle trail on WS slope. Approx. 10" of material missing from slope.

USACE_CESPK_L05E_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.021492 ° -120.434550 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Green plants on LS at toe. Very thick. Adjacent to 2 standpipes outside of project right of way. Could be an indication of problem with irrigation system.

USACE_CESPK_L05E_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.024778 ° -120.436790 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Crosses channel. Erosion of channel has exposed pipe. Riprap placed around pipe to prevent head-cutting. Closure devices on LS of levee. Siphon pipe to carry water from 1 side of bypass to other.

USACE_CESPK_L05E_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.028228 ° -120.439171 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Crosses channel. Erosion of channel has exposed pipe. Riprap placed around pipe to prevent head-cutting. Closure devices on LS of levee. Siphon pipe to carry water from 1 side of bypass to other.

USACE_CESPK_L05E_2011_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
37.028228 ° -120.439171 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Crosses channel. Erosion of channel has exposed pipe. Riprap placed around pipe to prevent head-cutting. Closure devices on LS of levee. Siphon pipe to carry water from 1 side of bypass to other.

USACE_CESPK_L05E_2011_a_0014_3.jpg

GPS Latitude/Longitude	
Start	End
37.028228 ° -120.439171 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L05E_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.031588 ° -120.441348 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Thick grasses on both slopes longer than 12". Obscures slopes for inspection.

USACE_CESPK_L05E_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.030830 ° -120.440750 °	36.997040 ° -120.411280 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Thick grasses on both slopes longer than 12". Obscures slopes for inspection.

USACE_CESPK_L05E_2011_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
37.030830 ° -120.440750 °	36.997040 ° -120.411280 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Thick grasses on both slopes longer than 12". Obscures slopes for inspection.

USACE_CESPK_L05E_2011_a_0016_3.jpg

GPS Latitude/Longitude	
Start	End
37.030830 ° -120.440750 °	36.997040 ° -120.411280 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_3.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_4.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_5.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_6.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_7.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_8.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting in channel downstream of bridge. Bottom of channel to bottom of scour is approx 40 feet.

USACE_CESPK_L05E_2011_a_0017_9.jpg

GPS Latitude/Longitude	
Start	End
37.018257 ° -120.433322 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting at pipe across channel. Pipe used to be buried under invert of channel.

USACE_CESPK_L05E_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.027866 ° -120.440404 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5, Eastside Bypass right bank below Berenda Slough (L05E)	Right	3.00	State	8/31/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting at pipe across channel. Pipe used to be buried under invert of channel.

USACE_CESPK_L05E_2011_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
37.027866 °	0.000000 °
-120.440404 °	0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 14, Ash Slough left bank/LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: September 1- November 13, 2012

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ____

Internal Technical Review (for Periodic Inspections) By: ____   Date of ITR: ____

Final Approval By: ____   Date Approved: ____

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	U	A	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	U	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	M	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	U	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	U	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	U	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Initial Eligibility Inspection

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Foundation of Concrete Structures	OT	M	Erosion behind LB wall of drop structure. Water stop intact at joint. : Repair erosion.	37.033775 ° -120.441133 °	0.000000 ° 0.000000 °	0001 Y
2			Flood Damage Reduction Channels	Foundation of Concrete Structures	OT	U	Base of concrete structure exposed on downstream face. Cobbles washed away from drop structure. : Repair erosion protection at base of drop structure.	37.033774 ° -120.441371 °	0.000000 ° 0.000000 °	0002 Y
3			Flood Damage Reduction Channels	Erosion	OT	U	Head cutting downstream from drop structure greater than 1 foot. : NA	37.033494 ° -120.441424 °	0.000000 ° 0.000000 °	0003 Y
4			Flood Damage Reduction Channels	Concrete Surfaces	CR	A	Drop Structure looks ok. Notice rock downstream of drop structure. Drop Str downstream from here looks very different. : NA	37.037670 ° -120.439480 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of levee. Long grasses make inspection difficult. : Control rodents and fill holes.	37.038778 ° -120.438575 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Seepage	LS	U	Ring berm on LS slope. Evidence of shovel marks landside of berm. Possible seepage location. : Repair seepage and restore slope.	37.040247 ° -120.437820 °	0.000000 ° 0.000000 °	0006 Y
7			Flood Damage Reduction Channels	Concrete Surfaces	OT	A	Drop structure # 3 looks ok. : NA	37.042407 ° -120.435908 °	0.000000 ° 0.000000 °	0007 Y
8			Flood Damage Reduction Channels	Shoaling (sediment deposition)	CR	M	Sediment deposition downstream of drop structure. : Remove sediment.	37.042413 ° -120.435917 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on both slopes obscures visibility for inspection. : Trim vegetation.	37.032370 ° -120.441190 °	37.045450 ° -120.427510 °	0010 Y
10			Levee Embankments	Seepage	LS	U	Ring berm on LS slope. Evidence of shovel marks landside of berm. Possible seepage location. : Repair seepage and restore slope.	37.042905 ° -120.434560 °	0.000000 ° 0.000000 °	0011 Y
11			Flood Damage Reduction Channels	Encroachments	OT	U	Fill placed above and upstream of drop structure. 2 pipes placed thru fill, but filled in with sediment. Only way for water to pass the drop structure is thru culverts on headwalls of the drop structure. : Confirm design flow can pass with required freeboard. Confirm condition of pipes and siphon with as builts.	37.045468 ° -120.429965 °	0.000000 ° 0.000000 °	0012 Y
12			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	U	Tree upstream of drop structure. : NA	37.045235 ° -120.429907 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Provides irrigation water to canal on LS. Positive closure device at WS hinge. : Video inspect pipe thru levee.	37.044932 ° -120.429698 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Gravity line thru levee for irrigation canal. Positive closure device at WS hinge. : Video inspect pipe thru levee.	37.045418 ° -120.427710 °	0.000000 ° 0.000000 °	0015 Y
15			Flood Damage Reduction Channels	Shoaling (sediment deposition)	OT	A	Evidence of material removed from channel upstream of drop structure. : NA	37.045512 ° -120.429281 °	0.000000 ° 0.000000 °	0016 Y
16			Levee Embankments	Animal Control	SC	U	No rodent control program in place. Rodent holes in levee slopes. : Control rodents and repair holes.			0017

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L014_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Minimally Acceptable; Remarks: Erosion behind LB wall of drop structure. Water stop intact at joint.

USACE_CESPK_L014_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
37.033775 ° -120.441133 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Minimally Acceptable; Remarks: Erosion behind LB wall of drop structure. Water stop intact at joint.

USACE_CESPK_L014_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
37.033775 ° -120.441133 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Unacceptable Yellow; Remarks: Base of concrete structure exposed on downstream face. Cobbles washed away from drop structure.

USACE_CESPK_L014_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.033774 ° -120.441371 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Unacceptable Yellow; Remarks: Base of concrete structure exposed on downstream face. Cobbles washed away from drop structure.

USACE_CESPK_L014_2011_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
37.033774 ° -120.441371 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Unacceptable Yellow; Remarks: Base of concrete structure exposed on downstream face. Cobbles washed away from drop structure.

USACE_CESPK_L014_2011_a_0002_3.jpg

GPS Latitude/Longitude	
Start	End
37.033774 ° -120.441371 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Red; Remarks: Head cutting downstream from drop structure greater than 1 foot.

USACE_CESPK_L014_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.033494 ° -120.441424 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop Structure looks ok. Notice rock downstream of drop structure. Drop Str downstream from here looks very different.

USACE_CESPK_L014_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
37.037670 ° -120.439480 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop Structure looks ok. Notice rock downstream of drop structure. Drop Str downstream from here looks very different.

USACE_CESPK_L014_2011_a_0004_2.jpg

GPS Latitude/Longitude	
Start	End
37.037670 ° -120.439480 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop Structure looks ok. Notice rock downstream of drop structure. Drop Str downstream from here looks very different.

USACE_CESPK_L014_2011_a_0004_3.jpg

GPS Latitude/Longitude	
Start	End
37.037670 ° -120.439480 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Rodent holes on both sides of levee. Long grasses make inspection difficult.	

USACE_CESPK_L014_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.038778 ° -120.438575 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Rodent holes on both sides of levee. Long grasses make inspection difficult.	

USACE_CESPK_L014_2011_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
37.038778 ° -120.438575 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage
Rated Item: 15. Seepage; Rating: Unacceptable Yellow; Remarks: Ring berm on LS slope. Evidence of shovel marks landside of berm. Possible seepage location.	

USACE_CESPK_L014_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.040247 ° -120.437820 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop structure # 3 looks ok.

USACE_CESPK_L014_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.042407 ° -120.435908 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop structure # 3 looks ok.

USACE_CESPK_L014_2011_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
37.042407 ° -120.435908 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Drop structure # 3 looks ok.

USACE_CESPK_L014_2011_a_0007_3.jpg

GPS Latitude/Longitude	
Start	End
37.042407 ° -120.435908 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Minimally Acceptable; Remarks: Sediment deposition downstream of drop structure.

USACE_CESPK_L014_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.042413 ° -120.435917 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes obscures visibility for inspection.

USACE_CESPK_L014_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.032370 ° -120.441190 °	37.045450 ° -120.427510 °
Rating³:	U

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes obscures visibility for inspection.

USACE_CESPK_L014_2011_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
37.032370 ° -120.441190 °	37.045450 ° -120.427510 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rated Item: 15. Seepage; Rating: Unacceptable Yellow; Remarks: Ring berm on LS slope. Evidence of shovel marks landside of berm. Possible seepage location.

USACE_CESPK_L014_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.042905 ° -120.434560 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rated Item: 15. Seepage; Rating: Unacceptable Yellow; Remarks: Ring berm on LS slope. Evidence of shovel marks landside of berm. Possible seepage location.

USACE_CESPK_L014_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.042905 ° -120.434560 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fill placed above and upstream of drop structure. 2 pipes placed thru fill, but filled in with sediment. Only way for water to pass the drop structure is thru culverts on headwalls of the drop structure.

USACE_CESPK_L014_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.045468 ° -120.429965 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fill placed above and upstream of drop structure. 2 pipes placed thru fill, but filled in with sediment. Only way for water to pass the drop structure is thru culverts on headwalls of the drop structure.

USACE_CESPK_L014_2011_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
37.045468 ° -120.429965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fill placed above and upstream of drop structure. 2 pipes placed thru fill, but filled in with sediment. Only way for water to pass the drop structure is thru culverts on headwalls of the drop structure.

USACE_CESPK_L014_2011_a_0012_3.jpg

GPS Latitude/Longitude	
Start	End
37.045468 ° -120.429965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fill placed above and upstream of drop structure. 2 pipes placed thru fill, but filled in with sediment. Only way for water to pass the drop structure is thru culverts on headwalls of the drop structure.

USACE_CESPK_L014_2011_a_0012_4.jpg

GPS Latitude/Longitude	
Start	End
37.045468 ° -120.429965 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Tree upstream of drop structure.

USACE_CESPK_L014_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.045235 ° -120.429907 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Provides irrigation water to canal on LS. Positive closure device at WS hinge.

USACE_CESPK_L014_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.044932 ° -120.429698 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Gravity line thru levee for irrigation canal. Positive closure device at WS hinge.

USACE_CESPK_L014_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
37.045418 ° -120.427710 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 14, Ash Slough left bank (L014)	Left	1.34	State	9/1/2011 11/13/2012	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Gravity line thru levee for irrigation canal. Positive closure device at WS hinge.

USACE_CESPK_L014_2011_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
37.045418 ° -120.427710 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Acceptable; Remarks: Evidence of material removed from channel upstream of drop structure.

USACE_CESPK_L014_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.045512 ° -120.429281 °	0.000000 ° 0.000000 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 15, Berenda Slough right bank/LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: August 31- November 14, 2012

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared: ____________

Internal Technical Review (for Periodic Inspections) By: ____________

Date of ITR: ____________

Final Approval By: ____________

Date Approved: ____________

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**A**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	**M**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 15, Berenda Slough right bank (L015)	Right	2.01	State	8/31/2011 11/14/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Encroachments	OT	M	Barbed wire across channel under bridge. : Remove barbed wire.	36.996023 ° -120.383307 °	0.000000 ° 0.000000 °	0002 Y
2			Levee Embankments	Animal Control	SC	U	Small dia rodent holes on both sides of levee. 1" dia. : Control rodents and fill holes.	36.996585 ° -120.391393 °	0.000000 ° 0.000000 °	0003 Y
3			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	36.996568 ° -120.392253 °	0.000000 ° 0.000000 °	0004 Y
4			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. Held shut by board. : Video inspect pipe thru levee. Remove board holding flap gate.	36.996551 ° -120.401702 °	0.000000 ° 0.000000 °	0005 Y
5			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on both slopes. Thickest on LS. Obscures slope for inspection. : Trim vegetation.	36.996570 ° -120.410410 °	36.996590 ° -120.373740 °	0006 Y
6			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. Held closed by board. : Video inspect pipe thru levee.	36.996570 ° -120.382743 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Animal Control	SC	U	No rodent control program in place. Holes in both levee slopes. : Control rodents and repair holes.	36.996592 ° -120.410227 °	0.000000 ° 0.000000 °	0009

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L015_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 15, Berenda Slough right bank (L015)	Right	2.01	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Barbed wire across channel under bridge.

USACE_CESPK_L015_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.996023 ° -120.383307 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Small dia rodent holes on both sides of levee. 1" dia.

USACE_CESPK_L015_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.996585 ° -120.391393 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_L015_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.996568 ° -120.392253 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 15, Berenda Slough right bank (L015)	Right	2.01	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS. Held shut by board.

USACE_CESPK_L015_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.996551 ° -120.401702 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes. Thickest on LS. Obscures slope for inspection.

USACE_CESPK_L015_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.996570 ° -120.410410 °	36.996590 ° -120.373740 °

Rating[3]: U

LIS Issue Number[1]	0007
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS. Held closed by board.

USACE_CESPK_L015_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.996570 ° -120.382743 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Report Created on Wednesday, November 14, 2012 14:23

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Chowchilla River - Ash Slough left bank/LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: September 1 - 1, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______

Date of ITR: ______

Final Approval By: ______

Date Approved: ______

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	M	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	M	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	M	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board | Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

Index[1]	Levee Mile Start	Levee Mile End	Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude Start	GPS Latitude/Longitude End	Issue No. [4] Photo [5]
1			Levee Embankments	Unwanted Vegetation Growth	SC	U	Trees and long grasses along levee. WS grasses very long. Obscures visibility for inspection. : NA	37.045986 ° -120.425728 °	0.000000 ° 0.000000 °	0002 Y
2			Levee Embankments	Encroachments	LS	U	Boat and RV with cover at LS toe. Other debris at toe. : Remove from project right of way.	37.045996 ° -120.425259 °	0.000000 ° 0.000000 °	0003 Y
3			Levee Embankments	Encroachments	LS	U	Hose bib at LS toe. : Remove from project right of way.	37.046395 ° -120.424122 °	0.000000 ° 0.000000 °	0004
4			Levee Embankments	Unwanted Vegetation Growth	LS	U	Trees on LS slope greater than 2". : NA	37.046150 ° -120.424700 °	37.046390 ° -120.423970 °	0005 Y
5			Levee Embankments	Animal Control	SC	M	Rodent holes on LS slope. WS slope vegetation too thick to inspect. Several holes with large spoil piles. : Control rodents and fill holes.	37.045640 ° -120.426740 °	37.046090 ° -120.424960 °	0006 Y
6			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Open on WS, under water level. No positive closure device. Cannot confirm where pipe daylights on LS. Pipe appears to run away from levee, but not perpendicular. : Confirm permit status and location of pipe thru levee. Video inspect pipe thru levee. Provide positive closure device.	37.047190 ° -120.422477 °	0.000000 ° 0.000000 °	0007 Y
7			Levee Embankments	Encroachments	LS	U	Fence along LS hinge. Fill against LS of Levee. : Remove from project right of way.	37.048470 ° -120.420480 °	37.049680 ° -120.418900 °	0008 Y
8			Levee Embankments	Unwanted Vegetation Growth	SC	U	Trees and vegetation on WS of levee. Completely obscures slope for inspection. Not interim veg compliant. : NA	37.046820 ° -120.423050 °	37.049370 ° -120.419460 °	0009 Y
9			Levee Embankments	Encroachments	LS	U	Debris stored on LS slope and toe. : Remove from project right of way.	37.050438 ° -120.418192 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Encroachments	LS	U	LS toe cut. Approx height of cut 6". : Restore slope and toe.	37.052225 ° -120.416707 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Encroachments	SC	U	Utility poles on LS and WS slopes. : Confirm permit status Remove from project right of way.	37.051310 ° -120.417330 °	37.052970 ° -120.416450 °	0012 Y
12			Levee Embankments	Depressions/ Rutting	LS	M	Vehicle rutting on LS slope. : Repair ruts.	37.053195 ° -120.416275 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	37.054830 ° -120.415605 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Erosion/ Bank Caving	LS	M	Tree down in channel. Erosion hole left by tree is below levee (LS toe elevation). : Repair erosion to prevent erosion of levee. Remove tree.	37.055654 ° -120.412386 °	0.000000 ° 0.000000 °	0016 Y
15			Levee Embankments	Encroachments	LS	U	LS toe cut 10" high. : Restore toe and slope.	37.055897 ° -120.411557 °	0.000000 ° 0.000000 °	0017 Y
16			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	M	Trees down in channel. : NA	37.055950 ° -120.411513 °	0.000000 ° 0.000000 °	0018 Y
17			Levee Embankments	Encroachments	LS	U	Irrigation valve at LS toe. Causing erosion of LS toe. : Remove from project right of way are restore toe.	37.056262 ° -120.410947 °	0.000000 ° 0.000000 °	0019 Y
18			Levee Embankments	Encroachments	LS	U	Garden on LS slope and toe. Pumpkins and grapes. : Remove from project right of way.	37.056190 ° -120.411058 °	0.000000 ° 0.000000 °	0020 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW2_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
19			Levee Embankments	Encroachments	LS	U	Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation. : Remove pipe from project right of way.	37.056300 ° -120.410920 °	37.057780 ° -120.409940 °	0021 Y
20			Levee Embankments	Encroachments	LS	U	Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation. : Remove pipe from project right of way and repair erosion from valves.	37.057760 ° -120.409950 °	37.058890 ° -120.406940 °	0022 Y
21			Levee Embankments	Encroachments	LS	U	Debris pile at LS toe. : Remove from project right of way.	37.059597 ° -120.405717 °	0.000000 ° 0.000000 °	0024 Y
22			Levee Embankments	Unwanted Vegetation Growth	OT	U	Vegetation and trees on levee slopes. Worst on WS slope. Obscures visibility for inspection. Not interim vegetation compliant. : NA	37.054660 ° -120.415690 °	37.063900 ° -120.401150 °	0025 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW2_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees and long grasses along levee. WS grasses very long. Obscures visibility for inspection.

USACE_CESPK_CHW2_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
37.045986 ° -120.425728 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Boat and RV with cover at LS toe. Other debris at toe.

USACE_CESPK_CHW2_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
37.045996 ° -120.425259 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees on LS slope greater than 2".

USACE_CESPK_CHW2_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
37.046150 ° -120.424700 °	37.046390 ° -120.423970 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Rodent holes on LS slope. WS slope vegetation too thick to inspect. Several holes with large spoil piles.

USACE_CESPK_CHW2_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
37.045640 ° -120.426740 °	37.046090 ° -120.424960 °
Rating³: M	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Rodent holes on LS slope. WS slope vegetation too thick to inspect. Several holes with large spoil piles.

USACE_CESPK_CHW2_2011_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
37.045640 ° -120.426740 °	37.046090 ° -120.424960 °
Rating³: M	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Open on WS, under water level. No positive closure device. Cannot confirm where pipe daylights on LS. Pipe appears to run away from levee, but not perpendicular.

USACE_CESPK_CHW2_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
37.047190 ° -120.422477 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence along LS hinge. Fill against LS of Levee.

USACE_CESPK_CHW2_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
37.048470 ° -120.420480 °	37.049680 ° -120.418900 °
Rating³:	U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees and vegetation on WS of levee. Completely obscures slope for inspection. Not interim veg compliant.

USACE_CESPK_CHW2_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
37.046820 ° -120.423050 °	37.049370 ° -120.419460 °
Rating³:	U

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Debris stored on LS slope and toe.

USACE_CESPK_CHW2_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
37.050438 ° -120.418192 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: LS toe cut. Approx height of cut 6".

USACE_CESPK_CHW2_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
37.052225 ° -120.416707 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: LS toe cut. Approx height of cut 6".

USACE_CESPK_CHW2_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
37.052225 ° -120.416707 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility poles on LS and WS slopes.

USACE_CESPK_CHW2_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
37.051310 ° -120.417330 °	37.052970 ° -120.416450 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number[1]	0013
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Vehicle rutting on LS slope.

USACE_CESPK_CHW2_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
37.053195 ° -120.416275 °	0.000000 ° 0.000000 °
Rating[3]: M	

LIS Issue Number[1]	0014
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_CHW2_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
37.054830 ° -120.415605 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Rated Item: 6. Erosion/ Bank Caving; Rating: Minimally Acceptable; Remarks: Tree down in channel. Erosion hole left by tree is below levee (LS toe elevation).

USACE_CESPK_CHW2_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
37.055654 ° -120.412386 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: LS toe cut 10" high.

USACE_CESPK_CHW2_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
37.055897 ° -120.411557 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Trees down in channel.

USACE_CESPK_CHW2_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
37.055950 ° -120.411513 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation valve at LS toe. Causing erosion of LS toe.

USACE_CESPK_CHW2_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
37.056262 ° -120.410947 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Garden on LS slope and toe. Pumpkins and grapes.

USACE_CESPK_CHW2_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
37.056190 ° -120.411058 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation.

USACE_CESPK_CHW2_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
37.056300 ° -120.410920 °	37.057780 ° -120.409940 °
Rating³: U	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation.

USACE_CESPK_CHW2_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
37.057760 ° -120.409950 °	37.058890 ° -120.406940 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation.

USACE_CESPK_CHW2_2011_a_0022_2.jpg

GPS Latitude/Longitude	
Start	End
37.057760 ° -120.409950 °	37.058890 ° -120.406940 °
Rating³: U	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Irrigation line under LS toe with valves at LS toe. Might be abandoned as adjacent orchard has drip irrigation.

USACE_CESPK_CHW2_2011_a_0022_3.jpg

GPS Latitude/Longitude	
Start	End
37.057760 ° -120.409950 °	37.058890 ° -120.406940 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Debris pile at LS toe.

USACE_CESPK_CHW2_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
37.059597 ° -120.405717 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Ash Slough left bank (CHW2)	Left	2.03	State	9/1/2011 9/1/2011	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation and trees on levee slopes. Worst on WS slope. Obscures visibility for inspection. Not interim vegetation compliant.

USACE_CESPK_CHW2_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
37.054660 ° -120.415690 °	37.063900 ° -120.401150 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation and trees on levee slopes. Worst on WS slope. Obscures visibility for inspection. Not interim vegetation compliant.

USACE_CESPK_CHW2_2011_a_0025_2.jpg

GPS Latitude/Longitude	
Start	End
37.054660 ° -120.415690 °	37.063900 ° -120.401150 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation and trees on levee slopes. Worst on WS slope. Obscures visibility for inspection. Not interim vegetation compliant.

USACE_CESPK_CHW2_2011_a_0025_3.jpg

GPS Latitude/Longitude	
Start	End
37.054660 ° -120.415690 °	37.063900 ° -120.401150 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Chowchilla River - Berenda Slough right bank/LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: August 31 - November 14, 2012

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	A	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	A	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	A	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**A**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**N/A**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	**U**	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	**A**	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	**A**	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	**A**	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Unwanted Vegetation Growth	OT	U	Tree on WS slope. : NA	36.996603 ° -120.346914 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Animal Control	SC	U	Rodent holes on both slopes under tree. Bait station nearby. : Control rodents and fill holes.	36.996668 ° -120.347143 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Unwanted Vegetation Growth	LS	U	Trees on LS slope. Not interim veg compliant. Cannot see slope. : NA	36.996662 ° -120.351211 °	0.000000 ° 0.000000 °	0004 Y
4			Levee Embankments	Unwanted Vegetation Growth	OT	U	Tree in WS slope. : NA	36.996603 ° -120.354257 °	0.000000 ° 0.000000 °	0005
5			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	U	Large linear mound in center of channel. Mound crest taller than levees on N and S of channel. : Confirm channel can pass design flow.	36.996350 ° -120.346550 °	36.996180 ° -120.354740 °	0006 Y
6			Levee Embankments	Encroachments	LS	U	Ditch along LS of levee at toe. Cannot be inspected because of tall vegetation. : Confirm permit status.	36.996580 ° -120.354650 °	36.996660 ° -120.346820 °	0007 Y
7			Levee Embankments	Unwanted Vegetation Growth	LS	U	LS slope obscured with vegetation. : NA	36.996560 ° -120.354720 °	36.996580 ° -120.346690 °	0008
8			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate chained open. Trash rack on LS of levee. : Video inspect pipe thru levee.	36.996168 ° -120.371965 °	0.000000 ° 0.000000 °	0009 Y
9			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on both slopes longer than 12". Obscures visibility for inspection. : NA	36.996100 ° -120.372150 °	36.996210 ° -120.356070 °	0010 Y
10			Levee Embankments	Unwanted Vegetation Growth	LS	U	Tree in LS slope. : NA	36.996490 ° -120.372930 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Unwanted Vegetation Growth	LS	U	Tree in LS slope. : NA	36.996557 ° -120.373138 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Encroachments	LS	U	Pipe runs parallel to levee under LS toe. Standpipe on LS slope. : Confirm permit status.	36.996528 ° -120.373148 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Pump on WS. No positive closure at WS hinge. Closure device on LS toe Permit # 13950. : Video inspect pipe thru levee .	36.996590 ° -120.373627 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Animal Control	SC	U	No rodent control program in place. Holes in both levee slopes. : Control rodents and repair holes.			0015

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW3_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Tree on WS slope.

USACE_CESPK_CHW3_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.996603 ° -120.346914 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Yellow; Remarks: Rodent holes on both slopes under tree. Bait station nearby.

USACE_CESPK_CHW3_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.996668 ° -120.347143 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees on LS slope. Not interim veg compliant. Cannot see slope.

USACE_CESPK_CHW3_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.996662 ° -120.351211 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Large linear mound in center of channel. Mound crest taller than levees on N and S of channel.

USACE_CESPK_CHW3_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.996350 ° -120.346550 °	36.996180 ° -120.354740 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Large linear mound in center of channel. Mound crest taller than levees on N and S of channel.

USACE_CESPK_CHW3_2011_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
36.996350 ° -120.346550 °	36.996180 ° -120.354740 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Ditch along LS of levee at toe. Cannot be inspected because of tall vegetation.

USACE_CESPK_CHW3_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.996580 ° -120.354650 °	36.996660 ° -120.346820 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate chained open. Trash rack on LS of levee.

USACE_CESPK_CHW3_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.996168 ° -120.371965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate chained open. Trash rack on LS of levee.

USACE_CESPK_CHW3_2011_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
36.996168 ° -120.371965 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes longer than 12". Obscures visibility for inspection.

USACE_CESPK_CHW3_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.996100 ° -120.372150 °	36.996210 ° -120.356070 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Tree in LS slope.

USACE_CESPK_CHW3_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.996490 ° -120.372930 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Tree in LS slope.

USACE_CESPK_CHW3_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.996557 ° -120.373138 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe runs parallel to levee under LS toe. Standpipe on LS slope.

USACE_CESPK_CHW3_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.996528 ° -120.373148 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5, 14, and 15 - Ash and Berenda Slghs Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough right bank (CHW3)	Right	1.51	State	8/31/2011 11/14/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe runs parallel to levee under LS toe. Standpipe on LS slope.

USACE_CESPK_CHW3_2011_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
36.996528 ° -120.373148 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Pump on WS. No positive closure at WS hinge. Closure device on LS toe Permit # 13950.

USACE_CESPK_CHW3_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.996590 ° -120.373627 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Pump on WS. No positive closure at WS hinge. Closure device on LS toe Permit # 13950.

USACE_CESPK_CHW3_2011_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
36.996590 ° -120.373627 °	0.000000 ° 0.000000 °
Rating³: U	

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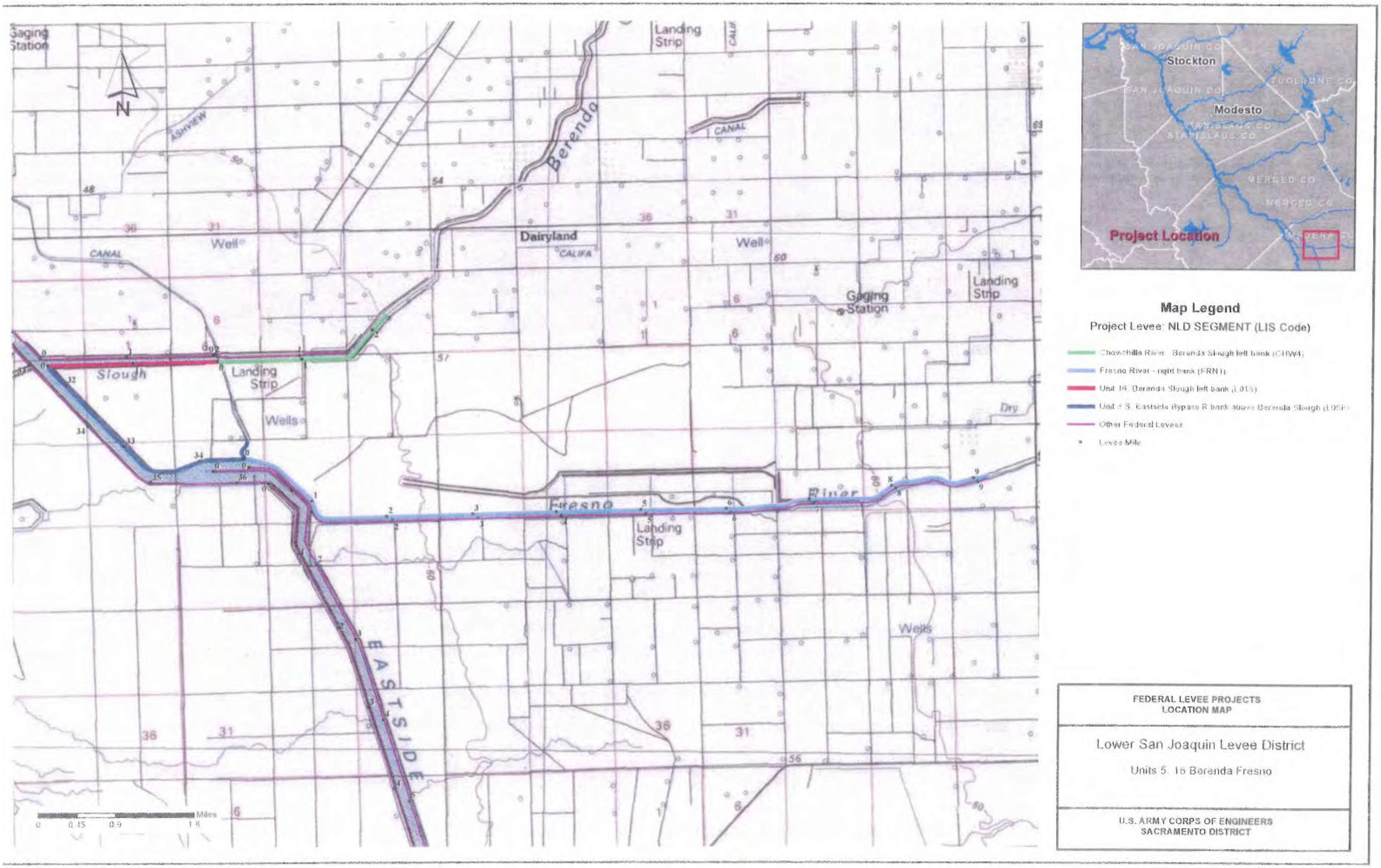
¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable



Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- 🟩 Chowchilla River - Berenda Slough left bank (CHW4)
- 🟦 Fresno River - right bank (FRN1)
- 🟥 Unit 16 Berenda Slough left bank (L016)
- 🟦 Unit 5 S. Eastside Bypass R bank above Berenda Slough (L05F)
- 🟪 Other Federal Levees
- * Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

Lower San Joaquin Levee District

Units 5, 16 Berenda Fresno

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 20 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between August 30 - 31, 2011, inspectors Ryan Larson, Bob Murakami, and Gene Vaughan from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5 and 16 - Berenda Slough and Fresno River system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 4 segments:

Segment Name
Chowchilla River - Berenda Slough left bank (CHW4)
Fresno River - right bank (FRN1)
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
	The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5 and 16 - Berenda Slough and Fresno River system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, slope stability, animal control, and channel erosion. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation; depressions and rutting; and vegetation and obstructions (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channel portions of the project. There is a large head cut in Fresno River (see inspection FRN1_2011_a_0048) that should be repaired and the channel invert re-established. Sediment removal operations were noted during the inspection. Ensure that accumulated piles of sediment within the floodway are removed outside the limits of the project right-of-way. Vegetation and obstructions should be removed from the channel prior to the flood season.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E. for BRADEN LEMASTER
Colonel, U.S. Army
District Commander
LTC EN
DPTY CDR

Enclosures:
1) Report card
2) Map
3) Levee inspection reports with photos

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between August 30 - 31, 2011, inspectors Ryan Larson, Bob Murakami, and Gene Vaughan from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) - Units 5 and 16 - Berenda Slough and Fresno River system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, Report Card, and Detailed Inspection Report serve as a summary of the inspection.

The system is comprised of 4 segments:

Segment Name
Chowchilla River - Berenda Slough left bank (CHW4)
Fresno River - right bank (FRN1)
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
	The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD-Units 5 and 16 - Berenda Slough and Fresno River system is rated Unacceptable and is Inactive in the Rehabilitation and Inspection Program. The unacceptable rating is due to encroachments, slope stability, animal control, and channel erosion. An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event (shown in red on the report card).

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation; depressions and rutting; and vegetation and obstructions (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channels checklists are also attached showing the observations from the channel portions of the project. There is a large head cut in Fresno River (see inspection FRN1_2011_a_0048) that should be repaired and the channel invert re-established. Sediment removal operations were noted during the inspection. Ensure that accumulated piles of sediment within the floodway are removed outside the limits of the project right-of-way. Vegetation and obstructions should be removed from the channel prior to the flood season.

When inspecting the encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to the Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:
1) Report card
2) Map
3) Levee inspection reports with photos

CEI 8/31/2011 LSJLD-Units 5 and 16 - Berenda Slough and Fresno R

LARSON

NAGY

OLSEN

PERLEA

FONTAINE

POEPPELMAN

FAUSTINO

MULLINS

LEADY

cc:
SPK Flood Risk Manager

SPK Readiness

SPK Levee Safety

O:\FP&Nav\ICW\!_Inspections_System Folders\LSJLD-Units 5 and 16 – Berenda Slough and Fresno R\2011 CEI UI\CoverLetter_LSJLD-Units 5 and 16 – Berenda Slough and Fresno R_1.docx

	System LSJLD-Units 5, 16 Berenda Fresno Unacceptable - Active	Chowchilla River - Berenda Slough Left Bank (CHW4)	Fresno River - Right Bank (FRN1)	LSJLD - Unit 5 South, Eastside Bypass Right Bank above Berenda Slough (L05F)	LSJLD - Berenda Slough Left Bank (L016)
General	Operations and Maintenance Manuals	A	A	A	A
	Emergency Supplies and Equipment	A	A	A	A
	Flood Preparedness and Training	A	A	A	A
Levee Embankments	Unwanted Vegetation Growth	U	U	U	U
	Sod Cover	NA	U	NA	NA
	Encroachments	U	U	U	U
	Closure Structures	NA	NA	NA	NA
	Slope Stability	U	U	A	A
	Erosion/Bank Caving	A	A	A	A
	Settlement	A	A	A	A
	Depressions/Rutting	U	U	A	U
	Cracking	A	A	A	A
	Animal Control	U	U	U	U
	Culverts/Discharge Pipes	NA	NA	NA	NA
	Riprap Revetments & Bank Protection	NA	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA	NA
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA
	Seepage	A	A	A	A
Flood Damage Reduction Channels	Vegetation and Obstructions	A	U	A	A
	Shoaling	A	M	A	A
	Encroachments	A	A	A	A
	Erosion	A	U	A	A
	Concrete Surfaces	NA	NA	A	NA
	Tilting, Sliding, or Settlement of Concrete	NA	NA	A	NA
	Foundation of Concrete Structures	NA	NA	M	NA
	Slab and Monolith Joints	NA	NA	NA	NA
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA
	Riprap Revetments & Banks	NA	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA	NA

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

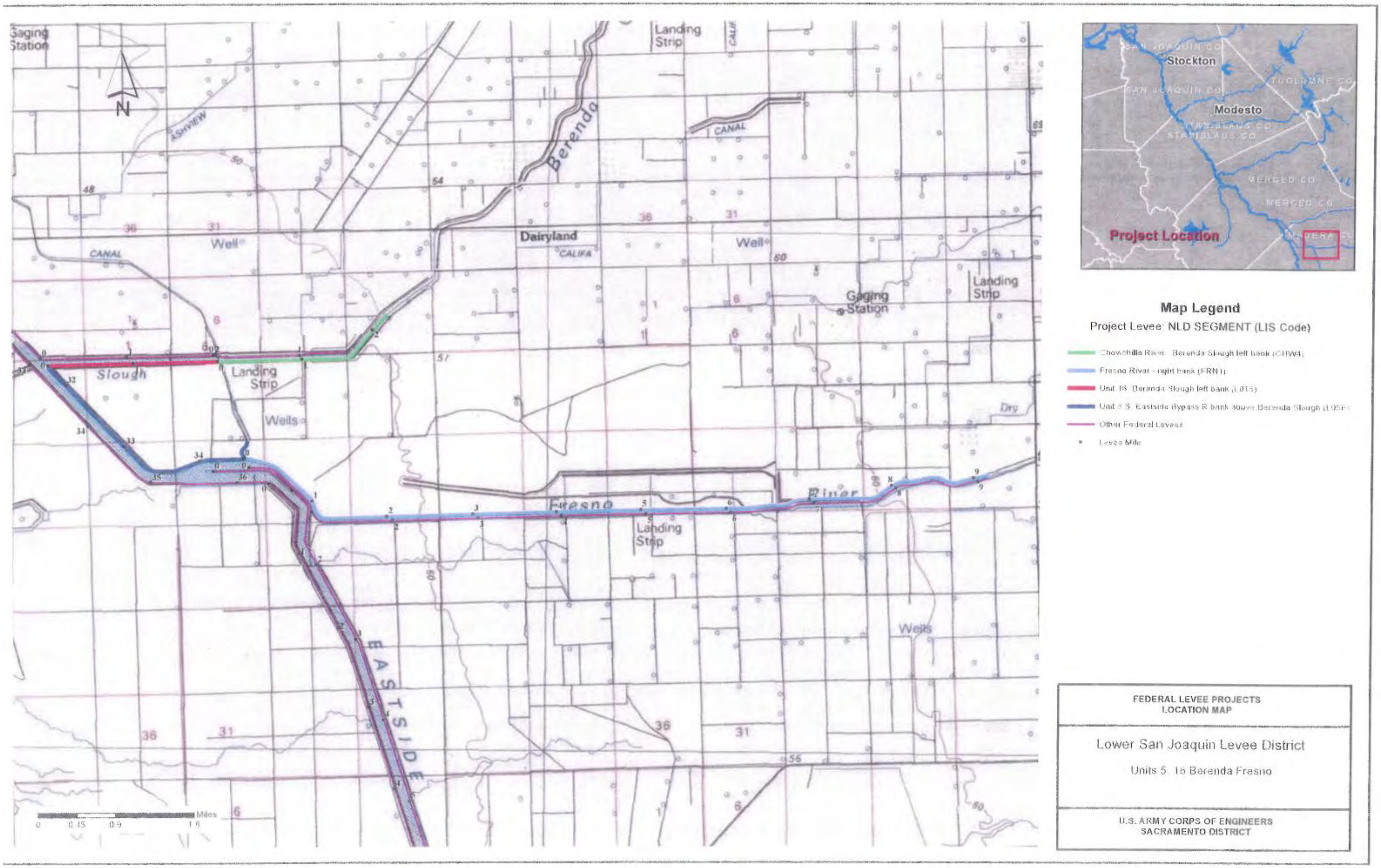
Not Likely to Prevent Performance In Next Flood Event/Active

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

11/21/2012



FEDERAL LEVEE PROJECTS
LOCATION MAP

Lower San Joaquin Levee District

Units 5, 16 Berenda Fresno

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Chowchilla River - Berenda Slough left bank/LSJLD-Units 5 and 16 - Berenda Slough and Fresno R

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan

Date of Inspection: August 30 - 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______

Date of ITR: ______

Final Approval By: ______

Date Approved: ______

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**N/A**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**U**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	**N/A**	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Animal Control		U	5+ large diameter rodent holes on LS. Adjacent to large void on WS caused by tree in levee. : Control rodents and fill holes.	36.995480 ° -120.372873 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Unwanted Vegetation Growth		U	Trees in WS slope. Void from tree splitting at WS slope. : Fill void in slope.	36.995510 ° -120.372963 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Animal Control		U	Many holes on LS and WS slopes. Most just below bait station on LS. Some as deep as 5 feet into levee. : Control rodents and fill holes.	36.995522 ° -120.372387 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Unwanted Vegetation Growth		U	Trees in WS slope greater than 2". : NA	36.995500 ° -120.371420 °	36.995520 ° -120.368520 °	0004 Y
5			Levee Embankments	Encroachments		U	Tree branch on WS slope. : Remove from project right of way.	36.995527 ° -120.366640 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Unwanted Vegetation Growth		U	Tree stump in slope. Rotting and decaying. Void around stump 1.5" deep. : Remove stump and roots.	36.995575 ° -120.365660 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Unwanted Vegetation Growth		U	2 trees in WS slope larger than 2" in dia. : NA	36.995537 ° -120.365780 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		U	Standpipe in LS slope. Pipe crosses levee. Pipes also parallel to levee slope within prism. Pipe does not outlet on WS. No positive closure device on WS. Standpipe has outlet to drain water down LS slope. : Confirm permit status.	36.995503 ° -120.365603 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Unwanted Vegetation Growth		U	Dead tree on WS slope. : Remove tree and roots.	36.995547 ° -120.365273 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Unwanted Vegetation Growth		U	Dead tree on WS slope. : Remove tree and roots.	36.995527 ° -120.364785 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Unwanted Vegetation Growth		U	Walnut tree in WS slope. : NA	36.995528 ° -120.362342 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Unwanted Vegetation Growth		U	Trees in WS slope. : NA	36.995540 ° -120.360683 °	0.000000 ° 0.000000 °	0012
13			Levee Embankments	Animal Control		M	Rodent hole near crown causing a dip in crown road. : Control rodents and fill holes.	36.995542 ° -120.359985 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Unwanted Vegetation Growth		U	Tree on WS slope. : NA	36.995555 ° -120.357523 °	0.000000 ° 0.000000 °	0014
15			Levee Embankments	Unwanted Vegetation Growth		U	Tree on WS slope. : NA	36.995577 ° -120.356658 °	0.000000 ° 0.000000 °	0015
16			Levee Embankments	Depressions/ Rutting		U	Rutting from vehicle traffic on LS slope. Deeper than 6". : Restore slope.	36.995565 ° -120.356482 °	0.000000 ° 0.000000 °	0016 Y
17			Levee Embankments	Encroachments		U	Utility poles in LS slope. Parallel to levee. : Confirm permit status.	36.995460 ° -120.372930 °	36.995610 ° -120.355590 °	0017 Y
18			Levee Embankments	Unwanted Vegetation Growth		U	Tree greater than 2" in dia in WS slope. : NA	36.995553 ° -120.355310 °	0.000000 ° 0.000000 °	0018
19			Levee Embankments	Encroachments		U	Disking on LS slope near toe. : Stay away from levee when disking.	36.995481 ° -120.355911 °	0.000000 ° 0.000000 °	0019 Y

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW4_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
20			Levee Embankments	Unwanted Vegetation Growth		U	Dead tree on WS slope. : Remove tree and roots.	36.995580 ° -120.354263 °	0.000000 ° 0.000000 °	0020
21			Levee Embankments	Unwanted Vegetation Growth		U	Tree in WS slope greater than 12". : NA	36.995578 ° -120.352050 °	0.000000 ° 0.000000 °	0021
22			Levee Embankments	Unwanted Vegetation Growth		U	Tree in WS slope. : NA	36.995577 ° -120.348977 °	0.000000 ° 0.000000 °	0022
23			Levee Embankments	Unwanted Vegetation Growth		U	Tree in WS slope. : NA	36.995575 ° -120.347293 °	0.000000 ° 0.000000 °	0023
24			Levee Embankments	Animal Control		M	Rodent hole on LS slope. : Fill holes and control rodents.	36.995588 ° -120.346262 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on WS slope and crown. Longer than 12". Obscures visibility for inspection. : Trim vegetation.	36.995690 ° -120.355800 °	36.995600 ° -120.346290 °	0025 Y
26			Levee Embankments	Encroachments		U	Power pole in LS slope. : Confirm permit status.	36.995575 ° -120.346550 °	0.000000 ° 0.000000 °	0026 Y
27			Levee Embankments	Encroachments		U	Pipe thru levee. Slide gate on WS. Sinkhole over pipe on LS. Greater than 3 feet deep. : Video inspect pipe thru levee. Confirm permit status. Restore slope. Investigate reason for sinkhole.	36.995588 ° -120.346440 °	0.000000 ° 0.000000 °	0027 Y
28			Levee Embankments	Slope Stability		U	Cracking with vertical displacement on LS slope. Causing dip in levee crown. Cracking 3" wide, 9" deep. : Repair Slope.	36.995573 ° -120.346387 °	0.000000 ° 0.000000 °	0028 Y
29			Levee Embankments	Depressions/ Rutting		U	Rutting on LS slope. 8" deep. : Restore slope.	36.995588 ° -120.346317 °	0.000000 ° 0.000000 °	0029 Y
30			Levee Embankments	Encroachments		U	Fence at WS toe in floodway for cattle. Perpendicular to flow of channel. : Confirm permit status.	36.995622 ° -120.346315 °	0.000000 ° 0.000000 °	0030 Y
31			Levee Embankments	Encroachments		M	LS toe cut. Approx. 8 feet long and 1 foot deep. : Restore toe.	36.995678 ° -120.345823 °	0.000000 ° 0.000000 °	0031 Y
32			Levee Embankments	Unwanted Vegetation Growth		M	Rutting on LS slope. : Restore slope.	36.995812 ° -120.345373 °	0.000000 ° 0.000000 °	0032
33			Levee Embankments	Animal Control		U	Rodent holes on both sides of levee. : Control rodents and fill holes.	36.996233 ° -120.344748 °	0.000000 ° 0.000000 °	0033 Y
34			Levee Embankments	Encroachments		U	Gate across crown. Keys do not work. Remote operated. : Provide access to levee.	36.996267 ° -120.344728 °	0.000000 ° 0.000000 °	0034 Y
35			Levee Embankments	Animal Control		U	Complete infestation of both sides of levee and crown. Some holes larger than 12" in dia. : Control rodents and fill holes.	36.996350 ° -120.344500 °	37.003280 ° -120.337630 °	0035 Y
36			Levee Embankments	Encroachments		U	Fence along WS toe parallel to levee. : Confirm permit status.	36.996390 ° -120.344450 °	37.003270 ° -120.337630 °	0036 Y
37			Levee Embankments	Animal Control		U	No rodent control program in place. : Control Rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0037

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_CHW4_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number[1]	0001
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: 5+ large diameter rodent holes on LS. Adjacent to large void on WS caused by tree in levee.

USACE_CESPK_CHW4_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.995480 ° -120.372873 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0002
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees in WS slope. Void from tree splitting at WS slope.

USACE_CESPK_CHW4_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.995510 ° -120.372963 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0003
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Many holes on LS and WS slopes. Most just below bait station on LS. Some as deep as 5 feet into levee.

USACE_CESPK_CHW4_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.995522 ° -120.372387 °	0.000000 ° 0.000000 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Many holes on LS and WS slopes. Most just below bait station on LS. Some as deep as 5 feet into levee.

USACE_CESPK_CHW4_2011_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
36.995522 ° -120.372387 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Many holes on LS and WS slopes. Most just below bait station on LS. Some as deep as 5 feet into levee.

USACE_CESPK_CHW4_2011_a_0003_3.jpg

GPS Latitude/Longitude	
Start	End
36.995522 ° -120.372387 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Trees in WS slope greater than 2".

USACE_CESPK_CHW4_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.995500 ° -120.371420 °	36.995520 ° -120.368520 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Tree branch on WS slope.

USACE_CESPK_CHW4_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.995527 ° -120.366640 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Tree stump in slope. Rotting and decaying. Void around stump 1.5" deep.

USACE_CESPK_CHW4_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.995575 ° -120.365660 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: 2 trees in WS slope larger than 2" in dia.

USACE_CESPK_CHW4_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.995537 ° -120.365780 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Standpipe in LS slope. Pipe crosses levee. Pipes also parallel to levee slope within prism. Pipe does not outlet on WS. No positive closure device on WS. Standpipe has outlet to drain water down LS slope.

USACE_CESPK_CHW4_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.995503 ° -120.365603 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Standpipe in LS slope. Pipe crosses levee. Pipes also parallel to levee slope within prism. Pipe does not outlet on WS. No positive closure device on WS. Standpipe has outlet to drain water down LS slope.

USACE_CESPK_CHW4_2011_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
36.995503 ° -120.365603 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Standpipe in LS slope. Pipe crosses levee. Pipes also parallel to levee slope within prism. Pipe does not outlet on WS. No positive closure device on WS. Standpipe has outlet to drain water down LS slope.

USACE_CESPK_CHW4_2011_a_0008_3.jpg

GPS Latitude/Longitude	
Start	End
36.995503 ° -120.365603 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Dead tree on WS slope.

USACE_CESPK_CHW4_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.995547 ° -120.365273 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Dead tree on WS slope.

USACE_CESPK_CHW4_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.995527 ° -120.364785 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Walnut tree in WS slope.

USACE_CESPK_CHW4_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.995528 ° -120.362342 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole near crown causing a dip in crown road.

USACE_CESPK_CHW4_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.995542 ° -120.359985 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Rutting from vehicle traffic on LS slope. Deeper than 6".

USACE_CESPK_CHW4_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.995565 ° -120.356482 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility poles in LS slope. Parallel to levee.

USACE_CESPK_CHW4_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.995460 ° -120.372930 °	36.995610 ° -120.355590 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility poles in LS slope. Parallel to levee.

USACE_CESPK_CHW4_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
36.995460 ° -120.372930 °	36.995610 ° -120.355590 °
Rating³: U	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Disking on LS slope near toe.

USACE_CESPK_CHW4_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.995481 ° -120.355911 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole on LS slope.

USACE_CESPK_CHW4_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.995588 ° -120.346262 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on WS slope and crown. Longer than 12". Obscures visibility for inspection.

USACE_CESPK_CHW4_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
36.995690 ° -120.355800 °	36.995600 ° -120.346290 °
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on WS slope and crown. Longer than 12". Obscures visibility for inspection.

USACE_CESPK_CHW4_2011_a_0025_2.jpg

GPS Latitude/Longitude	
Start	End
36.995690 ° -120.355800 °	36.995600 ° -120.346290 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Power pole in LS slope.

USACE_CESPK_CHW4_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.995575 ° -120.346550 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Slide gate on WS. Sinkhole over pipe on LS. Greater than 3 feet deep.

USACE_CESPK_CHW4_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.995588 ° -120.346440 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee. Slide gate on WS. Sinkhole over pipe on LS. Greater than 3 feet deep.

USACE_CESPK_CHW4_2011_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
36.995588 ° -120.346440 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Unacceptable Red; Remarks: Cracking with vertical displacement on LS slope. Causing dip in levee crown. Cracking 3" wide, 9" deep.

USACE_CESPK_CHW4_2011_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
36.995573 ° -120.346387 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Unacceptable Red; Remarks: Cracking with vertical displacement on LS slope. Causing dip in levee crown. Cracking 3" wide, 9" deep.

USACE_CESPK_CHW4_2011_a_0028_2.jpg

GPS Latitude/Longitude	
Start	End
36.995573 ° -120.346387 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Rutting on LS slope. 8" deep.

USACE_CESPK_CHW4_2011_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.995588 ° -120.346317 °	0.000000 ° 0.000000 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence at WS toe in floodway for cattle. Perpendicular to flow of channel.

USACE_CESPK_CHW4_2011_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
36.995622 ° -120.346315 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: LS toe cut. Approx. 8 feet long and 1 foot deep.

USACE_CESPK_CHW4_2011_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.995678 ° -120.345823 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee.

USACE_CESPK_CHW4_2011_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
36.996233 ° -120.344748 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Gate across crown. Keys do not work. Remote operated.

USACE_CESPK_CHW4_2011_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
36.996267 ° -120.344728 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Complete infestation of both sides of levee and crown. Some holes larger than 12" in dia.

USACE_CESPK_CHW4_2011_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
36.996350 ° -120.344500 °	37.003280 ° -120.337630 °
Rating³: U	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Complete infestation of both sides of levee and crown. Some holes larger than 12" in dia.

USACE_CESPK_CHW4_2011_a_0035_2.jpg

GPS Latitude/Longitude	
Start	End
36.996350 ° -120.344500 °	37.003280 ° -120.337630 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Chowchilla River - Berenda Slough left bank (CHW4)	Left	2.22	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Complete infestation of both sides of levee and crown. Some holes larger than 12" in dia.

USACE_CESPK_CHW4_2011_a_0035_3.jpg

GPS Latitude/Longitude	
Start	End
36.996350 ° -120.344500 °	37.003280 ° -120.337630 °
Rating³: U	

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Fence along WS toe parallel to levee.

USACE_CESPK_CHW4_2011_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
36.996390 ° -120.344450 °	37.003270 ° -120.337630 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Fresno River - right bank/LSJLD-Units 5 and 16 - Berenda Slough and Fresno R

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughan   Date of Inspection: August 30, 2011

Inspection Report Prepared By: Kaylee Peterson   Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______   Date of ITR: ______

Final Approval By: ______   Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**U**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**U**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**A**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**U**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**U**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	U	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	U	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	U	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Initial Eligibility Inspection

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Unwanted Vegetation Growth	SC	U	Start of unit looking downstream LS slope is generally clear. Brush thick on WS. WS toe and slope obscured. : Trim veg on WS slope.	36.973258 ° -120.212042 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Encroachments	LS	M	Tall PVC pipe at LS toe. In line with other pipes on LS. Could be irrigation system underground at LS toe . Does not appear to cross levee. : Confirm permit status, remove from project right of way, investigate if a threat to the levee.	36.973050 ° -120.212813 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Animal Control	SC	U	Rodent hole parallel to alignment 15 feet deep, 8" in dia. on WS. No activity on LS in adjacent area. : Fill holes and control rodents.	36.972692 ° -120.215165 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments	LS	U	LS toe cut. Approx 8" tall. Approx 50' long. : Restore slope.	36.972618 ° -120.215632 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Depressions/ Rutting	CR	M	Crown narrow in this area from vehicles driving up LS slope@ ramp. : Restore slope.	36.972067 ° -120.220000 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Encroachments	LS	U	Utility pole at LS hinge point. : Confirm permit status or remove from project right of way.	36.972205 ° -120.220475 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments	LS	U	House and garage at LS toe. Patio for house appears to be cut into toe. Garage within 10 feet at LS. Clothes line and pole in LS slope. Debris at LS slope and toe. : Confirm permit status or remove from project right of way.	36.972380 ° -120.220996 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Unwanted Vegetation Growth	OT	U	WS slope obscured. : Trim brush.	36.972772 ° -120.221953 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Encroachments	LS	M	Stockpiles of material and brush at LS toe. : Remove from project right of way.	36.972955 ° -120.224209 °	0.000000 ° 0.000000 °	0010 Y
10			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides. Holes on LS have large spoil piles. 8" In dia. : Fill hole and control rodents.	36.972942 ° -120.224863 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Sod Cover	LS	M	Crevasse on LS slope 3" deep. : Repair.	36.972848 ° -120.225315 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of levee. Coyotes chasing squirrels making squirrel holes larger. : Fill holes and control rodents.	36.972552 ° -120.226743 °	0.000000 ° 0.000000 °	0013 Y
13			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	U	Concern from adjacent property owner that the project cannot pass the design flow of 5,000 cls. Thick vegetation in channel. : Confirm channel capacity and thin vegetation.	36.972140 ° -120.226750 °	36.971960 ° -120.216750 °	0014 Y
14			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Rocks blocking flap gate on WS. : Video inspect pipe thru levee. Remove blockage in front of flap gate.	36.972442 ° -120.229295 °	0.000000 ° 0.000000 °	0015 Y
15			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of levee. : Fill holes and control rodents.	36.972449 ° -120.228230 °	0.000000 ° 0.000000 °	0016
16			Levee Embankments	Sod Cover	LS	U	Rilling in LS slope 1.5 feet wide and more than 1 foot deep. : Restore slope.	36.971362 ° -120.232707 °	0.000000 ° 0.000000 °	0017 Y
17			Levee Embankments	Depressions/ Rutting	LS	U	2 Depressions in LS slope. Approx 12" deep. : Restore slope so water drains and does not erode.	36.970618 ° -120.234032 °	0.000000 ° 0.000000 °	0018 Y
18			Levee Embankments	Depressions/ Rutting	LS	U	10" depression at LS hinge from vehicle tire. : Restore slope.	36.970438 ° -120.234297 °	0.000000 ° 0.000000 °	0019 Y

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN1_2011_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Initial Eligibility Inspection

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
19			Levee Embankments	Animal Control	LS	M	Rodent holes on LS slope and toe. : Fill holes and control rodents.	36.969543 ° -120.237582 °	0.000000 ° 0.000000 °	0020 Y
20			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	36.969523 ° -120.238380 °	0.000000 ° 0.000000 °	0021 Y
21			Levee Embankments	Encroachments	SC	M	Stream gage poles on LS of levee. Poles in fill placed against LS of levee. Wire crosses above crown for stream gage. : Confirm permit status.	36.969532 ° -120.249852 °	0.000000 ° 0.000000 °	0022 Y
22			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Sediment in front of flap gate on WS. : Video inspect pipe thru levee. Remove sediment.	36.969535 ° -120.250208 °	0.000000 ° 0.000000 °	0023 Y
23			Flood Damage Reduction Channels	Shoaling (sediment deposition)	OT	A	Sediment removal operations ongoing. : NA	36.969171 ° -120.250009 °	0.000000 ° 0.000000 °	0024 Y
24			Levee Embankments	Unwanted Vegetation Growth	OT	U	Vegetation on WS of levee blocks visibility for inspection. : Trim vegetation.	36.969477 ° -120.251393 °	0.000000 ° 0.000000 °	0025 Y
25			Levee Embankments	Animal Control	SC	U	Levee infested with rodent holes on both sides. In 80 feet, approximately 50 holes. Interconnected along LS. Bait stations nearby. : Fill holes and control rodents.	36.969182 ° -120.252587 °	0.000000 ° 0.000000 °	0026 Y
26			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of levee. Interconnected. Some as deep as 9 feet. : Fill holes and control rodents.	36.969140 ° -120.252700 °	36.968520 ° -120.255800 °	0027 Y
27			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	M	Sand blockage in channel. : Ensure removal before flood season.	36.968233 ° -120.254607 °	0.000000 ° 0.000000 °	0028 Y
28			Levee Embankments	Encroachments	LS	M	Prunings on LS slope. : Remove from project right of way.	36.968552 ° -120.255385 °	0.000000 ° 0.000000 °	0029 Y
29			Levee Embankments	Encroachments	SC	U	3 pipes thru levee. Positive closure at WS hinge. : Video inspect pipes thru levee.	36.968448 ° -120.255520 °	0.000000 ° 0.000000 °	0030 Y
30			Levee Embankments	Encroachments	OT	U	Structure and wooden platform on WS of levee. Piles in WS levee slope. Stream gage? : Confirm permit status.	36.968507 ° -120.255403 °	0.000000 ° 0.000000 °	0031 Y
31			Levee Embankments	Animal Control	OT	M	Rodent holes on WS of levee. : Fill holes and control rodents.	36.968245 ° -120.263040 °	0.000000 ° 0.000000 °	0032 Y
32			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. Being held open by board and string. : Video inspect pipe thru levee.	36.968167 ° -120.265208 °	0.000000 ° 0.000000 °	0033 Y
33			Levee Embankments	Slope Stability	LS	M	Caving on LS slope. Uneven slope. No cracks or bulges present. 6 feet long. Less than 1 foot deep. : Restore slope.	36.968220 ° -120.267577 °	0.000000 ° 0.000000 °	0034 Y
34			Levee Embankments	Slope Stability	LS	U	Irregular slope. 25 feet long. Less than 1 foot deep. Bulges present at LS toe. : Restore slope.	36.968257 ° -120.270197 °	0.000000 ° 0.000000 °	0035 Y
35			Levee Embankments	Encroachments	LS	U	LS toe cut. 5" high. : Restore slope and toe.	36.968250 ° -120.273332 °	0.000000 ° 0.000000 °	0036 Y
36			Levee Embankments	Encroachments	LS	U	Utility pole in LS slope. : Confirm permit status or remove pole from project right of way.	36.968266 ° -120.273856 °	0.000000 ° 0.000000 °	0037 Y
37			Levee Embankments	Animal Control	LS	M	Rodent holes on LS slope : Fill holes and control rodents.	36.968225 ° -120.277322 °	0.000000 ° 0.000000 °	0038

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN1_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Initial Eligibility Inspection

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board | Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
38			Levee Embankments	Animal Control	LS	M	Rodent hole on LS slope. Material pile outside of hole. : Fill holes and control rodents.	36.968227 ° -120.278912 °	0.000000 ° 0.000000 °	0039 Y
39			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage, . Flap gate on WS. : Video inspect pipe thru levee.	36.968240 ° -120.282917 °	0.000000 ° 0.000000 °	0040 Y
40			Levee Embankments	Slope Stability	LS	U	Caving on LS slope. Bulges present at LS toe. : Restore slope.	36.968262 ° -120.284208 °	0.000000 ° 0.000000 °	0041 Y
41			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	36.968253 ° -120.292045 °	0.000000 ° 0.000000 °	0042 Y
42			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS : Video inspect pipe thru levee.	36.968218 ° -120.300942 °	0.000000 ° 0.000000 °	0043 Y
43			Levee Embankments	Unwanted Vegetation Growth	OT	M	Vegetation on WS needs to be trimmed. : NA	36.968470 ° -120.256560 °	36.967870 ° -120.301160 °	0044 Y
44			Levee Embankments	Animal Control	SC	U	Rodent holes in WS and LS slopes and crown. Bait station nearby. : Fill holes and control rodents.	36.968185 ° -120.303832 °	0.000000 ° 0.000000 °	0045 Y
45			Levee Embankments	Animal Control	LS	M	Rodent holes on LS slope. Rodent activity on WS, but not within 20 feet. : Fill holes and control rodents.	36.968070 ° -120.304980 °	36.967880 ° -120.308550 °	0046 Y
46			Levee Embankments	Encroachments	LS	M	Guy wire in LS slope. Levee is wide at this location. Guy anchor could be in overbuilt section. : Confirm permit status.	36.968108 ° -120.309985 °	0.000000 ° 0.000000 °	0047 Y
47			Flood Damage Reduction Channels	Erosion	OT	M	Head cutting in channel greater than 10 feet. Upstream of bridge. : NA	36.967675 ° -120.324660 °	0.000000 ° 0.000000 °	0048 Y
48			Levee Embankments	Animal Control	OT	M	Rodent hole in riprap under bridge. Rodents present. : Control rodents and fill holes.	36.967892 ° -120.328050 °	0.000000 ° 0.000000 °	0049 Y
49			Levee Embankments	Encroachments	OT	A	Fill on LS of levee. Crown approx 26' wide. : NA	36.968240 ° -120.304860 °	36.967840 ° -120.327920 °	0050
50			Levee Embankments	Depressions/ Rutting	CR	M	Vehicle rutting on crown, less than 6". : Repair ruts.	36.967953 ° -120.340978 °	0.000000 ° 0.000000 °	0051 Y
51			Levee Embankments	Animal Control	LS	M	Rodent holes on LS slope. : Control rodents and fill holes.	36.967927 ° -120.345318 °	0.000000 ° 0.000000 °	0052 Y
52			Levee Embankments	Depressions/ Rutting	LS	U	Vehicle rutting on LS slope. Greater than 6". : Restore slope.	36.967892 ° -120.350860 °	0.000000 ° 0.000000 °	0053 Y
53			Levee Embankments	Depressions/ Rutting	LS	M	Vehicle rutting on LS slope. : Restore Slope.	36.968119 ° -120.352118 °	0.000000 ° 0.000000 °	0054
54			Flood Damage Reduction Channels	Shoaling (sediment deposition)	OT	U	Piles of sediment in channel. : Remove from channel.	36.968171 ° -120.352890 °	0.000000 ° 0.000000 °	0055 Y
55			Levee Embankments	Encroachments	SC	U	4 pipes thru levee. Positive closure devices at WS hinge. : Video inspect pipes thru levee.	36.975427 ° -120.359548 °	0.000000 ° 0.000000 °	0056 Y
56			Levee Embankments	Encroachments	SC	U	Pipe thru levee for drainage, flap gate on WS. : Video inspect pipe thru levee.	36.978107 ° -120.365262 °	0.000000 ° 0.000000 °	0057 Y
57			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on slopes and crown. Obscures visibility for inspection. No trees, but long brush. 3-4 feet long. : Trim Vegetation.	36.968300 ° -120.301300 °	36.978720 ° -120.367600 °	0058 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN1_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Initial Eligibility Inspection

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
58			Levee Embankments	Animal Control	SC	U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0059

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.
[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN1_2011_a_####.
[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Start of unit looking downstream LS slope is generally clear. Brush thick on WS. WS toe and slope obscured.

USACE_CESPK_FRN1_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.973258 ° -120.212042 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Start of unit looking downstream LS slope is generally clear. Brush thick on WS. WS toe and slope obscured.

USACE_CESPK_FRN1_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
36.973258 ° -120.212042 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Tall PVC pipe at LS toe. In line with other pipes on LS. Could be irrigation system underground at LS toe . Does not appear to cross levee.

USACE_CESPK_FRN1_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.973050 ° -120.212813 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent hole parallel to alignment 15 feet deep, 8" in dia. on WS. No activity on LS in adjacent area.

USACE_CESPK_FRN1_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.972692 ° -120.215165 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: LS toe cut. Approx 8" tall. Approx 50' long.

USACE_CESPK_FRN1_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.972618 ° -120.215632 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Crown narrow in this area from vehicles driving up LS slope@ ramp.

USACE_CESPK_FRN1_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.972067 ° -120.220000 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility pole at LS hinge point.

USACE_CESPK_FRN1_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.972205 ° -120.220475 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: House and garage at LS toe. Patio for house appears to be cut into toe. Garage within 10 feet at LS. Clothes line and pole in LS slope. Debris at LS slope and toe.

USACE_CESPK_FRN1_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.972380 ° -120.220996 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: WS slope obscured.

USACE_CESPK_FRN1_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.972772 ° -120.221953 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Stockpiles of material and brush at LS toe.

USACE_CESPK_FRN1_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.972955 ° -120.224209 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides. Holes on LS have large spoil piles. 8" In dia.

USACE_CESPK_FRN1_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.972942 ° -120.224863 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides. Holes on LS have large spoil piles. 8" In dia.

USACE_CESPK_FRN1_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
36.972942 ° -120.224863 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Minimally Acceptable; Remarks: Crevasse on LS slope 3" deep.

USACE_CESPK_FRN1_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.972848 ° -120.225315 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. Coyotes chasing squirrels making squirrel holes larger.

USACE_CESPK_FRN1_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.972552 ° -120.226743 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. Coyotes chasing squirrels making squirrel holes larger.

USACE_CESPK_FRN1_2011_a_0013_2.jpg

GPS Latitude/Longitude	
Start	End
36.972552 ° -120.226743 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Unacceptable Yellow; Remarks: Concern from adjacent property owner that the project cannot pass the design flow of 5,000 cls. Thick vegetation in channel.

USACE_CESPK_FRN1_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.972140 ° -120.226750 °	36.971960 ° -120.216750 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Rocks blocking flap gate on WS.

USACE_CESPK_FRN1_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
36.972442 ° -120.229295 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Red; Remarks: Rilling in LS slope 1.5 feet wide and more than 1 foot deep.

USACE_CESPK_FRN1_2011_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.971362 ° -120.232707 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Sod Cover

Rated Item: 2. Sod Cover; Rating: Unacceptable Red; Remarks: Rilling in LS slope 1.5 feet wide and more than 1 foot deep.

USACE_CESPK_FRN1_2011_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
36.971362 ° -120.232707 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: 2 Depressions in LS slope. Approx 12" deep.

USACE_CESPK_FRN1_2011_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
36.970618 ° -120.234032 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: 10" depression at LS hinge from vehicle tire.

USACE_CESPK_FRN1_2011_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.970438 ° -120.234297 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope and toe.

USACE_CESPK_FRN1_2011_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
36.969543 ° -120.237582 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_FRN1_2011_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
36.969523 ° -120.238380 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Stream gage poles on LS of levee. Poles in fill placed against LS of levee. Wire crosses above crown for stream gage.

USACE_CESPK_FRN1_2011_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
36.969532 ° -120.249852 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee. Sediment in front of flap gate on WS.

USACE_CESPK_FRN1_2011_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
36.969535 ° -120.250208 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Acceptable; Remarks: Sediment removal operations ongoing.

USACE_CESPK_FRN1_2011_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.969171 ° -120.250009 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on WS of levee blocks visibility for inspection.

USACE_CESPK_FRN1_2011_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
36.969477 ° -120.251393 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Levee infested with rodent holes on both sides. In 80 feet, approximately 50 holes. Interconnected along LS. Bait stations nearby.

USACE_CESPK_FRN1_2011_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.969182 ° -120.252587 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Levee infested with rodent holes on both sides. In 80 feet, approximately 50 holes. Interconnected along LS. Bait stations nearby.

USACE_CESPK_FRN1_2011_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
36.969182 ° -120.252587 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Levee infested with rodent holes on both sides. In 80 feet, approximately 50 holes. Interconnected along LS. Bait stations nearby.

USACE_CESPK_FRN1_2011_a_0026_3.jpg

GPS Latitude/Longitude	
Start	End
36.969182 ° -120.252587 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Levee infested with rodent holes on both sides. In 80 feet, approximately 50 holes. Interconnected along LS. Bait stations nearby.

USACE_CESPK_FRN1_2011_a_0026_4.jpg

GPS Latitude/Longitude	
Start	End
36.969182 ° -120.252587 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. interconnected. Some as deep as 9 feet.

USACE_CESPK_FRN1_2011_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.969140 ° -120.252700 °	36.968520 ° -120.255800 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. interconnected. Some as deep as 9 feet.

USACE_CESPK_FRN1_2011_a_0027_2.jpg

GPS Latitude/Longitude	
Start	End
36.969140 ° -120.252700 °	36.968520 ° -120.255800 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. interconnected. Some as deep as 9 feet.

USACE_CESPK_FRN1_2011_a_0027_3.jpg

GPS Latitude/Longitude	
Start	End
36.969140 ° -120.252700 °	36.968520 ° -120.255800 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. interconnected. Some as deep as 9 feet.

USACE_CESPK_FRN1_2011_a_0027_4.jpg

GPS Latitude/Longitude	
Start	End
36.969140 ° -120.252700 °	36.968520 ° -120.255800 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. interconnected. Some as deep as 9 feet.

USACE_CESPK_FRN1_2011_a_0027_5.jpg

GPS Latitude/Longitude	
Start	End
36.969140 ° -120.252700 °	36.968520 ° -120.255800 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Rated Item: 1. Vegetation and Obstructions; Rating: Minimally Acceptable; Remarks: Sand blockage in channel.

USACE_CESPK_FRN1_2011_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
36.968233 ° -120.254607 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Prunings on LS slope.

USACE_CESPK_FRN1_2011_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.968552 ° -120.255385 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: 3 pipes thru levee. Positive closure at WS hinge.

USACE_CESPK_FRN1_2011_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
36.968448 ° -120.255520 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Structure and wooden platform on WS of levee. Piles in WS levee slope. Stream gage?

USACE_CESPK_FRN1_2011_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.968507 ° -120.255403 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on WS of levee.

USACE_CESPK_FRN1_2011_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
36.968245 ° -120.263040 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS. Being held open by board and string.

USACE_CESPK_FRN1_2011_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
36.968167 ° -120.265208 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Minimally Acceptable; Remarks: Caving on LS slope. Uneven slope. No cracks or bulges present. 6 feet long. Less than 1 foot deep.

USACE_CESPK_FRN1_2011_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
36.968220 ° -120.267577 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Unacceptable Yellow; Remarks: Irregular slope. 25 feet long. Less than 1 foot deep. Bulges present at LS toe.

USACE_CESPK_FRN1_2011_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
36.968257 ° -120.270197 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: LS toe cut. 5" high.

USACE_CESPK_FRN1_2011_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
36.968250 ° -120.273332 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Utility pole in LS slope.

USACE_CESPK_FRN1_2011_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
36.968266 ° -120.273856 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole on LS slope. Material pile outside of hole.

USACE_CESPK_FRN1_2011_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
36.968227 ° -120.278912 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage, . Flap gate on WS.

USACE_CESPK_FRN1_2011_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
36.968240 ° -120.282917 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Unacceptable Yellow; Remarks: Caving on LS slope. Bulges present at LS toe.

USACE_CESPK_FRN1_2011_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
36.968262 ° -120.284208 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.

USACE_CESPK_FRN1_2011_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
36.968253 ° -120.292045 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS

USACE_CESPK_FRN1_2011_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
36.968218 ° -120.300942 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Minimally Acceptable; Remarks: Vegetation on WS needs to be trimmed.

USACE_CESPK_FRN1_2011_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
36.968470 ° -120.256560 °	36.967870 ° -120.301160 °

Rating³: M

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Minimally Acceptable; Remarks: Vegetation on WS needs to be trimmed.

USACE_CESPK_FRN1_2011_a_0044_2.jpg

GPS Latitude/Longitude	
Start	End
36.968470 ° -120.256560 °	36.967870 ° -120.301160 °

Rating³: M

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes in WS and LS slopes and crown. Bait station nearby.

USACE_CESPK_FRN1_2011_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
36.968185 ° -120.303832 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope. Rodent activity on WS, but not within 20 feet.

USACE_CESPK_FRN1_2011_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
36.968070 ° -120.304980 °	36.967880 ° -120.308550 °

Rating³: M

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope. Rodent activity on WS, but not within 20 feet.

USACE_CESPK_FRN1_2011_a_0046_2.jpg

GPS Latitude/Longitude	
Start	End
36.968070 ° -120.304980 °	36.967880 ° -120.308550 °

Rating³: M

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Guy wire in LS slope. Levee is wide at this location. Guy anchor could be in overbuilt section.

USACE_CESPK_FRN1_2011_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
36.968108 ° -120.309985 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Yellow; Remarks: Head cutting in channel greater than 10 feet. Upstream of bridge.

USACE_CESPK_FRN1_2011_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
36.967675 ° -120.324660 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Yellow; Remarks: Head cutting in channel greater than 10 feet. Upstream of bridge.

USACE_CESPK_FRN1_2011_a_0048_2.jpg

GPS Latitude/Longitude	
Start	End
36.967675 ° -120.324660 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Yellow; Remarks: Head cutting in channel greater than 10 feet. Upstream of bridge.

USACE_CESPK_FRN1_2011_a_0048_3.jpg

GPS Latitude/Longitude	
Start	End
36.967675 ° -120.324660 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Erosion

Rated Item: 4. Erosion; Rating: Unacceptable Yellow; Remarks: Head cutting in channel greater than 10 feet. Upstream of bridge.

USACE_CESPK_FRN1_2011_a_0048_4.jpg

GPS Latitude/Longitude	
Start	End
36.967675 ° -120.324660 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole in riprap under bridge. Rodents present.

USACE_CESPK_FRN1_2011_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
36.967892 ° -120.328050 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Vehicle rutting on crown, less than 6".

USACE_CESPK_FRN1_2011_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
36.967953 ° -120.340978 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0052
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope.

USACE_CESPK_FRN1_2011_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
36.967927 ° -120.345318 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Vehicle rutting on LS slope. Greater than 6".

USACE_CESPK_FRN1_2011_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
36.967892 ° -120.350860 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Unacceptable Yellow; Remarks: Piles of sediment in channel.

USACE_CESPK_FRN1_2011_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
36.968171 ° -120.352890 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Unacceptable Yellow; Remarks: Piles of sediment in channel.

USACE_CESPK_FRN1_2011_a_0055_2.jpg

GPS Latitude/Longitude	
Start	End
36.968171 ° -120.352890 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: 4 pipes thru levee. Positive closure devices at WS hinge.

USACE_CESPK_FRN1_2011_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
36.975427 ° -120.359548 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for drainage, flap gate on WS.

USACE_CESPK_FRN1_2011_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
36.978107 ° -120.365262 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes and crown. Obscures visibility for inspection. No trees, but long brush. 3-4 feet long.

USACE_CESPK_FRN1_2011_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
36.968300 ° -120.301300 °	36.978720 ° -120.367600 °
Rating³: U	

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes and crown. Obscures visibility for inspection. No trees, but long brush. 3-4 feet long.

USACE_CESPK_FRN1_2011_a_0058_2.jpg

GPS Latitude/Longitude	
Start	End
36.968300 ° -120.301300 °	36.978720 ° -120.367600 °
Rating³: U	

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes and crown. Obscures visibility for inspection. No trees, but long brush. 3-4 feet long.

USACE_CESPK_FRN1_2011_a_0058_3.jpg

GPS Latitude/Longitude	
Start	End
36.968300 ° -120.301300 °	36.978720 ° -120.367600 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Fresno River - right bank (FRN1)	Right	9.10	State	8/30/2011 8/30/2011	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes and crown. Obscures visibility for inspection. No trees, but long brush. 3-4 feet long.

USACE_CESPK_FRN1_2011_a_0058_4.jpg

GPS Latitude/Longitude	
Start	End
36.968300 ° -120.301300 °	36.978720 ° -120.367600 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough/LSJLD-Units 5 and 16 - Berenda Slough and Fresno R

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughe

Date of Inspection: August 30 - 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared: ____________

Internal Technical Review (for Periodic Inspections) By: ____________

Date of ITR: ____________

Final Approval By: ____________

Date Approved: ____________

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☐ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	A	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	**A**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	**A**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	**M**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board | Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Animal Control	SC	U	Spur levee infested with rodents. Bait stations nearby. Program ineffective in this reach. : Control rodents and fill holes.	36.981620 ° -120.367670 °	36.978570 ° -120.368480 °	0001 Y
2			Levee Embankments	Encroachments	SC	U	Pipe thru levee for drainage. Screw gate at WS hinge. No flap gate. Screw gate closed. : Video inspect pipe thru levee.	36.978577 ° -120.368513 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Unwanted Vegetation Growth	LS	U	Vegetation on LS slope longer than 12". Obscures visibility for inspection. : Trim vegetation.	36.978510 ° -120.368750 °	36.978430 ° -120.376830 °	0003 Y
4			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of the levee. : Fill holes and control rodents.	36.977210 ° -120.381060 °	36.977570 ° -120.379830 °	0004 Y
5			Flood Damage Reduction Channels	Foundation of Concrete Structures	OT	M	Erosion along right bank wall of drop structure closest to Rd 9, greater than 1 foot. : Repair erosion.	36.976170 ° -120.382067 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on both slopes longer than 12". Obscures slopes for inspection. : Trim.	36.976708 ° -120.383255 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Animal Control	OT	M	Rodent holes on WS slope. : Control rodents and fill holes.	36.976705 ° -120.385427 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of the levee. : Control rodents and fill holes.	36.976680 ° -120.386470 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Animal Control	OT	U	Rodent burrow at WS toe. 15 feet deep. More than 2 cubic feet of material outside hole. : Control rodents and fill holes.	36.978552 ° -120.390513 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. Held closed with 2x4. : Video inspect pipe thru levee. Remove board holding flap gate closed.	36.980877 ° -120.393058 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Animal Control	SC	U	Rodent holes on both sides of levee. Worst holes on LS. : Control rodents and fill holes.	36.981048 ° -120.393272 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Animal Control	OT	M	Rodent holes on WS slope. LS slope is clear. : Control rodents and fill holes.	36.985140 ° -120.397850 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. Gate held shut by 2x4. : Video inspect pipe thru levee.	36.989408 ° -120.402727 °	0.000000 ° 0.000000 °	0013 Y
14			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS. : Video inspect pipe thru levee.	36.995078 ° -120.408838 °	0.000000 ° 0.000000 °	0014 Y
15			Levee Embankments	Encroachments	SC	M	Cattle grazing levee. Cattle trails and hoof prints. : Restore slopes.	36.995390 ° -120.409110 °	36.977590 ° -120.389450 °	0015 Y
16			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on WS and LS slopes. Vegetation thicker on LS. Obscures visibility for inspection. : Trim vegetation.	36.995000 ° -120.408800 °	36.976650 ° -120.383360 °	0016 Y
17			Levee Embankments	Animal Control	SC	U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0017

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L05F_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Spur levee infested with rodents. Bait stations nearby. Program ineffective in this reach.

USACE_CESPK_L05F_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.981620 ° -120.367670 °	36.978570 ° -120.368480 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Spur levee infested with rodents. Bait stations nearby. Program ineffective in this reach.

USACE_CESPK_L05F_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
36.981620 ° -120.367670 °	36.978570 ° -120.368480 °

Rating³: U

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Spur levee infested with rodents. Bait stations nearby. Program ineffective in this reach.

USACE_CESPK_L05F_2011_a_0001_3.jpg

GPS Latitude/Longitude	
Start	End
36.981620 ° -120.367670 °	36.978570 ° -120.368480 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for drainage. Screw gate at WS hinge. No flap gate. Screw gate closed.

USACE_CESPK_L05F_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.978577 ° -120.368513 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on LS slope longer than 12". Obscures visibility for inspection.

USACE_CESPK_L05F_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.978510 ° -120.368750 °	36.978430 ° -120.376830 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on LS slope longer than 12". Obscures visibility for inspection.

USACE_CESPK_L05F_2011_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
36.978510 ° -120.368750 °	36.978430 ° -120.376830 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L05F_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.977210 ° -120.381060 °	36.977570 ° -120.379830 °
Rating³:	U

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Foundation of Concrete Structures

Rated Item: 7. Foundation of Concrete Structures; Rating: Minimally Acceptable; Remarks: Erosion along right bank wall of drop structure closest to Rd 9, greater than 1 foot.

USACE_CESPK_L05F_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.976170 ° -120.382067 °	0.000000 ° 0.000000 °
Rating³:	M

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on both slopes longer than 12". Obscures slopes for inspection.

USACE_CESPK_L05F_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.976708 ° -120.383255 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on WS slope.

USACE_CESPK_L05F_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.976705 ° -120.385427 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on WS slope.

USACE_CESPK_L05F_2011_a_0007_2.jpg

GPS Latitude/Longitude	
Start	End
36.976705 ° -120.385427 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of the levee.

USACE_CESPK_L05F_2011_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.976680 ° -120.386470 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent burrow at WS toe. 15 feet deep. More than 2 cubic feet of material outside hole.

USACE_CESPK_L05F_2011_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.978552 ° -120.390513 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent burrow at WS toe. 15 feet deep. More than 2 cubic feet of material outside hole.

USACE_CESPK_L05F_2011_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
36.978552 ° -120.390513 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS. Held closed with 2x4.

USACE_CESPK_L05F_2011_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.980877 ° -120.393058 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. Worst holes on LS.

USACE_CESPK_L05F_2011_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.981048 ° -120.393272 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. Worst holes on LS.

USACE_CESPK_L05F_2011_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
36.981048 ° -120.393272 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both sides of levee. Worst holes on LS.

USACE_CESPK_L05F_2011_a_0011_3.jpg

GPS Latitude/Longitude	
Start	End
36.981048 ° -120.393272 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (R/S)
Category	Levee Embankments
Item	Animal Control
Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on WS slope. LS slope is clear.	

USACE_CESPK_L05F_2011_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.985140 ° -120.397850 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS. Gate held shut by 2x4.	

USACE_CESPK_L05F_2011_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.989408 ° -120.402727 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS.	

USACE_CESPK_L05F_2011_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.995078 ° -120.408838 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 5 south, Eastside Bypass right bank above Berenda Slough (L05F)	Right	3.08	State	8/30/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle grazing levee. Cattle trails and hoof prints.

USACE_CESPK_L05F_2011_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
36.995390 ° -120.409110 °	36.977590 ° -120.389450 °
Rating³: M	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle grazing levee. Cattle trails and hoof prints.

USACE_CESPK_L05F_2011_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
36.995390 ° -120.409110 °	36.977590 ° -120.389450 °
Rating³: M	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on WS and LS slopes. Vegetation thicker on LS. Obscures visibility for inspection.

USACE_CESPK_L05F_2011_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.995000 ° -120.408800 °	36.976650 ° -120.383360 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 16, Berenda Slough left bank/LSJLD-Units 5 and 16 - Berenda Slough and Fresno R

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Bob Murakami, Gene Vaughen

Date of Inspection: August 31, 2011

Inspection Report Prepared By: Kaylee Peterson

Date Report Prepared:

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☐ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damange reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

---

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

---

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2011

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: Maintainer

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)	Left	1.96	State	8/31/2011 8/31/2011	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments	SC	M	Cattle grazing slopes. Hoof prints from cattle and cattle trails. : Restore slopes.	36.995400 ° -120.383280 °	36.995420 ° -120.408460 °	0001 Y
2			Levee Embankments	Animal Control	LS	M	Rodent holes in LS slope. Same location as cattle damage. : Fill holes and control rodents.	36.995448 ° -120.394205 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Flap gate on WS held shut with board. : Video inspect pipe thru levee. Remove blockage so flap gate opens.	36.995505 ° -120.382843 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Animal Control	LS	M	Rodent hole above headwall on LS. : Control rodents and fill holes.	36.995523 ° -120.382820 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Depressions/ Rutting	LS	U	Vehicle rutting on LS slope. Greater than 6" of material missing from cross section. : Restore LS slope.	36.995487 ° -120.377215 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Unwanted Vegetation Growth	SC	U	Vegetation on slopes obscures visibility for inspection. No trees along reach. : Trim vegetation.	36.995580 ° -120.373910 °	36.995240 ° -120.408670 °	0006 Y
7			Levee Embankments	Encroachments	SC	M	Cattle grazing on slopes causing damage. : Restore slopes.	36.995440 ° -120.383020 °	36.995660 ° -120.373540 °	0007 Y
8			Levee Embankments	Animal Control	SC	U	Small dia rodent holes along entire reach on both sides of levee. Many holes near hinge points. : Control rodents and fill holes.	36.995460 ° -120.408570 °	36.995510 ° -120.374190 °	0008
9			Levee Embankments	Depressions/ Rutting	OT	M	Vehicle rutting on WS slope from driving around gate. Less than 6" deep. : Restore slope.	36.995492 ° -120.373425 °	0.000000 ° 0.000000 °	0009
10			Levee Embankments	Animal Control	OT	U	No rodent control program in place. : Control rodents and repair holes.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0010

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L016_2011_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)	Left	1.96	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle grazing slopes. Hoof prints from cattle and cattle trails.

USACE_CESPK_L016_2011_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.995400 ° -120.383280 °	36.995420 ° -120.408460 °
Rating³: M	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle grazing slopes. Hoof prints from cattle and cattle trails.

USACE_CESPK_L016_2011_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
36.995400 ° -120.383280 °	36.995420 ° -120.408460 °
Rating³: M	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes in LS slope. Same location as cattle damage.

USACE_CESPK_L016_2011_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.995448 ° -120.394205 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)	Left	1.96	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe thru levee for gravity drainage. Flap gate on WS held shut with board.

USACE_CESPK_L016_2011_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.995505 ° -120.382843 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole above headwall on LS.

USACE_CESPK_L016_2011_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.995523 ° -120.382820 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Vehicle rutting on LS slope. Greater than 6" of material missing from cross section.

USACE_CESPK_L016_2011_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.995487 ° -120.377215 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 5 and 16 - Berenda Slough and Fresno R Levee System

Levee Inspection Report Photos - 2011

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	InspectorTitle
Lower San Joaquin LD - Unit 16, Berenda Slough left bank (L016)	Left	1.96	State	8/31/2011 8/31/2011	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes obscures visibility for inspection. No trees along reach.

USACE_CESPK_L016_2011_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.995580 ° -120.373910 °	36.995240 ° -120.408670 °
Rating³: U	

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Vegetation on slopes obscures visibility for inspection. No trees along reach.

USACE_CESPK_L016_2011_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
36.995580 ° -120.373910 °	36.995240 ° -120.408670 °
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle grazing on slopes causing damage.

USACE_CESPK_L016_2011_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.995440 ° -120.383020 °	36.995660 ° -120.373540 °
Rating³: M	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Received Electronically
by CVFPB on 5/7/2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 15 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

Between September 17th and September 19th of 2012, inspectors Ryan Larson, Paul Risher, and Justin Hake from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the Lower San Joaquin Levee District (LSJLD) Units 17, 23, Fresno River, Chowchilla Bypass system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The Report Card, Map, and Levee Inspection Report with photos serve as a summary of the inspection.

The system is comprised of 3 segments:

Segment Names:
Fresno River - left bank (FRN2)
LSJLD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)
LSJLD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the LSJLD units 17, 23, Fresno River, Chowchilla Bypass system is rated Unacceptable and is Inactive in the PL 84-99 Rehabilitation and Inspection Program.

The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, and seepage (shown in red on the report card). These items should be corrected immediately.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation and depressions/rutting (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channel checklists are also attached showing the observations from the channel portions of the project. Unauthorized encroachments within the floodway should be addressed immediately. Any cracking or concrete spalling of control structures within the floodway should be repaired in a timely manner.

When inspecting an encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the conditions in the sponsor issued encroachment permit are being met.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a

levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:
1) Report Card
2) Map
3) Levee Inspection Reports with photos

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
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The system is comprised of 3 segments:

Segment Names:
Fresno River - left bank (FRN2)
LSJLD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)
LSJLD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)

The system rating is determined based solely on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable.

Rating Code	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the LSJLD units 17, 23, Fresno River, Chowchilla Bypass system is rated Unacceptable and is Inactive in the PL 84-99 Rehabilitation and Inspection Program.

The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, and seepage (shown in red on the report card). These items should be corrected immediately.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation and depressions/rutting (shown in yellow on attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

Flood Damage Reduction Channel checklists are also attached showing the observations from the channel portions of the project. Unauthorized encroachments within the floodway should be addressed immediately. Any cracking or concrete spalling of control structures within the floodway should be repaired in a timely manner.

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If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a

levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issues have been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk reduction structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson (916) 557-7568. A copy of this letter is being furnished to Madera County Office of Emergency Services, California Emergency Management Agency, FEMA Region IX, and Congressman Jim Costa.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures:

1) Report Card
2) Map
3) Levee Inspection Reports with photos

CEI 9/19/2012 LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass

Murakami

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Faustino

Mullins

Leady

File: \\spk-netapp1\coopublic\fp&nav\icw\!_inspections_system folders\lsjld-units 17, 23 - fresno r, chowchilla bypass

	System LSJLD-Units 17, 23, Fresno River, Chowchilla Bypass Unacceptable - Inactive	Fresno River - left bank (FRN2)	LSJLD- Unit 17, Chowchilla Bypass right back above Fresno River (L017)	LSJLD- Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)
General	Operations and Maintenance Manuals	A	A	A
	Emergency Supplies and Equipment	A	A	A
	Flood Preparedness and Training	A	A	A
Levee Embankments	Unwanted Vegetation Growth	U	U	U
	Sod Cover	NA	NA	NA
	Encroachments	U	U	U
	Closure Structures	NA	NA	NA
	Slope Stability	U	A	U
	Erosion/Bank Caving	M	A	U
	Settlement	A	A	A
	Depressions/Rutting	U	U	U
	Cracking	A	A	A
	Animal Control	U	U	U
	Culverts/Discharge Pipes	NA	NA	NA
	Riprap Revetments & Bank Protection	NA	NA	M
	Revetments other than Riprap	NA	NA	NA
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA
	Seepage	U	A	A
Flood Damage Reduction Channels	Vegetation and Obstructions	A	A	M
	Shoaling	A	M	M
	Encroachments	U	U	U
	Erosion	A	A	A
	Concrete Surfaces	A	M	NA
	Tilting, Sliding, or Settlement of Concrete	A	M	NA
	Foundation of Concrete Structures	A	A	NA
	Slab and Monolith Joints	A	M	NA
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA
	Riprap Revetments & Banks	NA	NA	NA
	Revetments other than Riprap	NA	NA	NA

Likely Prevents Performance In Next Flood Event/Inactive

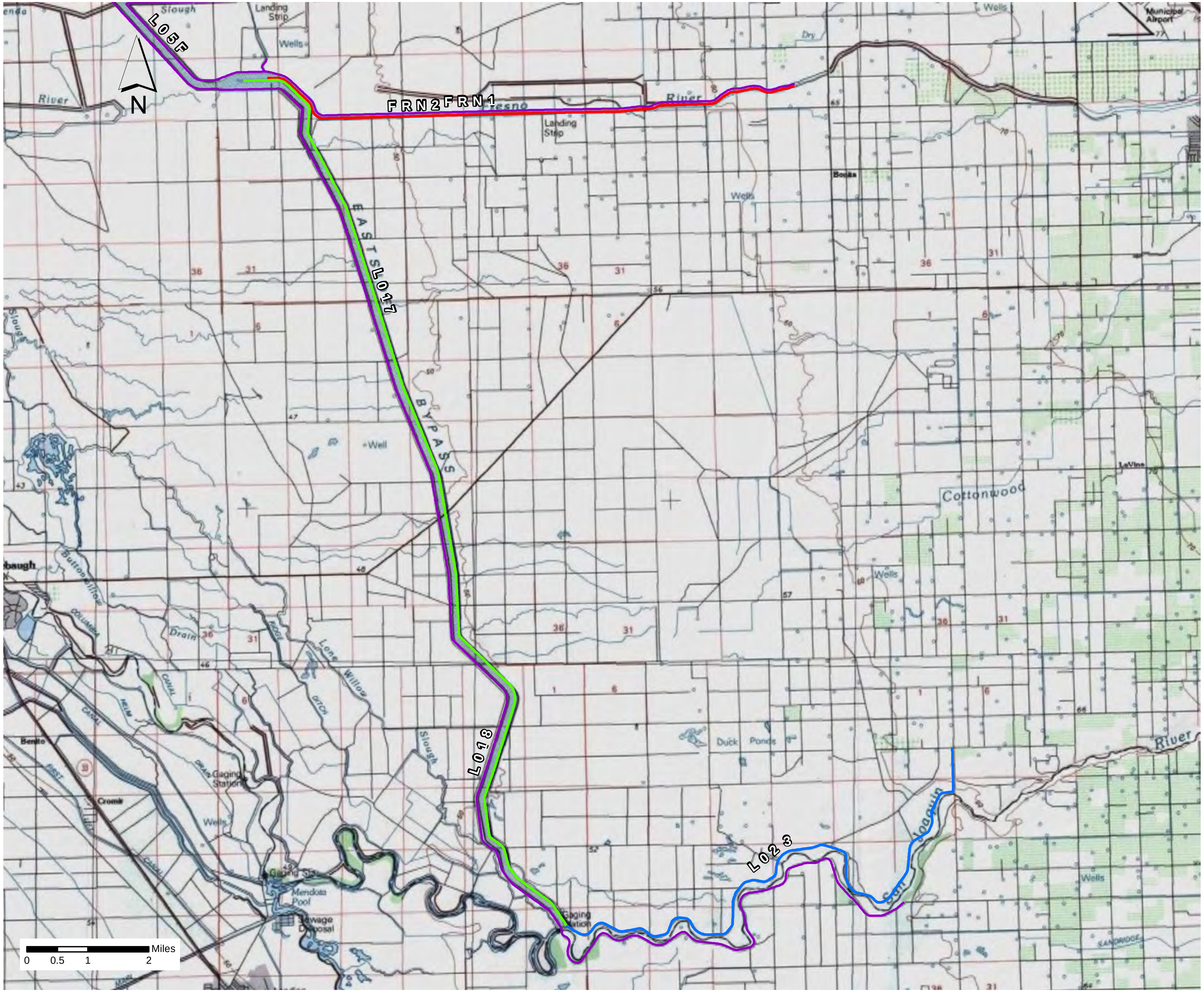
Serious deficiency noted in past inspections has not been corrected within the established timeframe

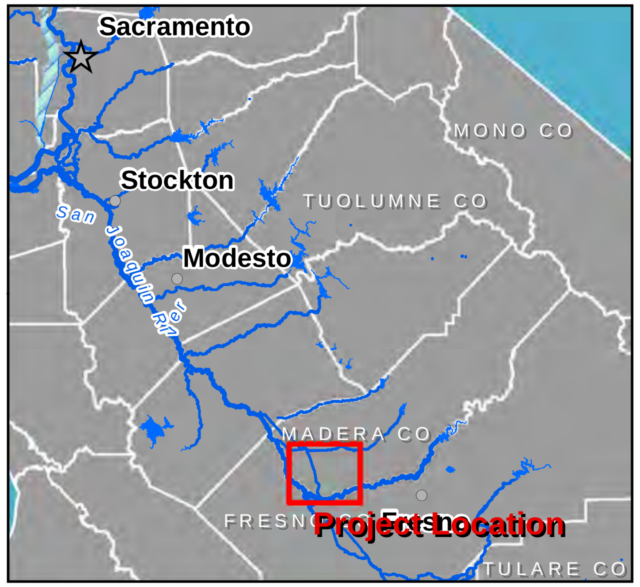
Not Likely to Prevent Performance In Next Flood Event/Active

The worst rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable





Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- Project Levees
- 🟥 Fresno River - left bank
- 🟩 Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River
- 🟦 Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN LEVEE DISTRICT System - Units 17 and 23 Fresno River Chowchilla Bypass

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Fresno River - left bank/LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Paul Risher, Justin Hake   Date of Inspection: 9/17/2012 - 9/19/2012

Inspection Report Prepared By: Justin Hake   Date Report Prepared: 9/25/2012

Internal Technical Review (for Periodic Inspections) By: ____   Date of ITR: ____

Final Approval By: ____   Date Approved: ____

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	**Periodic Inspections**
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled “Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
b. Photos of the general system condition and noted deficiencies.
c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	N/A	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	N/A	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	U	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	M	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	U	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

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US Army Corps of Engineers.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	A	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	U	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Levee Embankments	Encroachments		U	Piled cuttings on crown that blocks view of WS slope. : Remove debris from project right of way.	36.972313 ° -120.213093 °	0.000000 ° 0.000000 °	0001 Y
2			Levee Embankments	Animal Control		U	Burrows on both sides of levee. Six inch maximum diameter and at least 12 inches deep. : Repair burrows and control rodents.	36.972133 ° -120.214360 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Animal Control		M	Several small rodent burrows less then 12 inches deep, some active. : Repair holes and control rodents.	36.972068 ° -120.215232 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Animal Control		M	3-4 small rodent holes up to 3 feet deep. : Repair holes and control rodents.	36.971840 ° -120.216387 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		M	Brush piled on WS slope. : Remove from project right of way.	36.971437 ° -120.218225 °	0.000000 ° 0.000000 °	0005 Y
6			Flood Damage Reduction Channels	Encroachments		A	Low water crossing with ramps on both banks and levees. : NA	36.971332 ° -120.219182 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments		M	Piled brush obscures crown and WS slope. : Remove from project right of way.	36.971337 ° -120.219330 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Encroachments		U	Utility pole on LS hinge. : Confirm permit status.	36.971490 ° -120.220437 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Encroachments		U	Pipe though levee with headwall on WS. Closed flapgate on WS. : Provide inspection. Confirm permit status.	36.971485 ° -120.220337 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on WS over 12 inches tall. Prevents inspection of slope. : Remove unwanted vegetation.	36.972700 ° -120.211670 °	36.971500 ° -120.220390 °	0011 Y
11			Levee Embankments	Animal Control		U	Several burrows on crown and both slopes. Levee is roughly double width. Holes at least 60 inches deep. 5 inch depression on crown. : Repair holes, regrade roadway, and control rodents.	36.971930 ° -120.221523 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Unwanted Vegetation Growth		M	Tree with multiple trunks up to 2 inches in diameter on WS slope. : NA	36.972300 ° -120.222985 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Unwanted Vegetation Growth		U	Tree with multiple trunks up to 3 inches in diameter within 15 feet of levee toe. : NA	36.972352 ° -120.223657 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments		M	Berm on LS varies in height and width. Silty sandy material. Ditch between levee and berm in places up to 3 feet deep. : Ensure drainage away from levee.	36.971280 ° -120.229740 °	36.972450 ° -120.211730 °	0016 Y
15			Levee Embankments	Animal Control		U	Dozens of burrows on both sides of levee. Appear small and shallow. Typical of area. : Repair holes and control rodents.	36.970978 ° -120.231830 °	0.000000 ° 0.000000 °	0017 Y
16			Flood Damage Reduction Channels	Encroachments		U	Large pile of sand in channel, up to 6 feet tall, impairs channel capacity. : Ensure channel design conveyance capacity.	36.970758 ° -120.232835 °	0.000000 ° 0.000000 °	0018 Y
17			Levee Embankments	Animal Control		U	Several burrows on both sides of levee up to 12 inches deep. : Repair holes and control rodents.	36.970572 ° -120.232685 °	0.000000 ° 0.000000 °	0019 Y
18			Levee Embankments	Erosion/ Bank Caving		M	Erosion within 35 feet of WS toe. : Monitor erosion.	36.969895 ° -120.234040 °	0.000000 ° 0.000000 °	0020 Y
19			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation and brush on both slopes and crown up to 8 feet tall. : Remove unwanted vegetation.	36.969430 ° -120.234260 °	36.971440 ° -120.229660 °	0021 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN2_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
20			Levee Embankments	Seepage		M	Former Fresno River channel bed at toe of levee. Ponding up to 2 feet, could possibly detain up to 8 feet deep. : Provide drainage. monitor for seepage. Prevent levee toe saturation.	36.969498 ° -120.234422 °	0.000000 ° 0.000000 °	0022 Y
21			Levee Embankments	Encroachments		M	Pallets, tires, and truck parts on LS levee slope. : Remove	36.968915 ° -120.237207 °	0.000000 ° 0.000000 °	0023 Y
22			Levee Embankments	Encroachments		M	Access ramp on WS cuts into levee prism up to 6 inches. : Repair to as-built line and grade.	36.968972 ° -120.237408 °	0.000000 ° 0.000000 °	0024 Y
23			Levee Embankments	Encroachments		A	Power line over levee. More than 15 feet above crown. : NA	36.968798 ° -120.238204 °	0.000000 ° 0.000000 °	0025 Y
24			Levee Embankments	Encroachments		U	Pipe though levee with slide gate in riser on WS hinge. Open on water side and partially blocked with sediment. Obscured by thick brush on WS. : Video inspect pipe through levee. Ensure proper function of slide gate. Remove brush. Confirm permit status.	36.968855 ° -120.239080 °	0.000000 ° 0.000000 °	0026 Y
25			Levee Embankments	Encroachments		M	LS toe cut by road up to 6 inches into prism. : NA	36.968862 ° -120.240763 °	0.000000 ° 0.000000 °	0027 Y
26			Levee Embankments	Animal Control		M	Several burrows up to 12 inches deep. : Repair holes and control rodents.	36.968908 ° -120.241957 °	0.000000 ° 0.000000 °	0028 Y
27			Levee Embankments	Animal Control		M	Several holes up to 24 inches deep. : Repair holes and control rodents.	36.968808 ° -120.243987 °	0.000000 ° 0.000000 °	0029 Y
28			Levee Embankments	Unwanted Vegetation Growth		U	Mature cottonwood and smaller tree within 15 feet of WS toe. : NA	36.968817 ° -120.245730 °	0.000000 ° 0.000000 °	0030 Y
29			Levee Embankments	Encroachments		U	Pipe though levee with slide gate in riser at WS hinge. Open riser with rebar protruding on WS partially filled with sediment. : Video inspect pipe through levee. Ensure proper function of slide gate. Confirm permit status. Repair WS end of pipe.	36.968793 ° -120.247503 °	0.000000 ° 0.000000 °	0031 Y
30			Levee Embankments	Encroachments		M	Stream gaging trolley across levee and channel. Support pole on LS hinge. Cable less than 15 feet over crown. Noted in O&M manual. : Confirm permit status. Ensure emergency vehicle access.	36.968772 ° -120.249972 °	0.000000 ° 0.000000 °	0032 Y
31			Levee Embankments	Unwanted Vegetation Growth		U	Mature tree within 15 feet of WS toe. : NA	36.968673 ° -120.251645 °	0.000000 ° 0.000000 °	0033 Y
32			Levee Embankments	Encroachments		U	Pipe though levee just upstream of diversion dam. Slide gate in riser on WS hinge. Headwall and wing walls on WS. Pipe end open. : Video inspect pipe through levee. Ensure proper function of slide gate. Confirm permit status.	36.968015 ° -120.255537 °	0.000000 ° 0.000000 °	0034 Y
33			Flood Damage Reduction Channels	Encroachments		A	Diversion dam and bridge across channel noted in O&M manual. Concrete appears to be in good condition. No significant debris. : NA	36.967972 ° -120.255553 °	0.000000 ° 0.000000 °	0035 Y
34			Levee Embankments	Slope Stability		U	7 inch deep slope failure. 8 feet wide with bulge at toe. : Repair.	36.967852 ° -120.257428 °	0.000000 ° 0.000000 °	0036 Y
35			Levee Embankments	Animal Control		U	Several large diameter holes at least 5 feet deep : Repair holes and control rodents.	36.967850 ° -120.257587 °	0.000000 ° 0.000000 °	0037 Y
36			Levee Embankments	Depressions/ Rutting		U	Tire rutting up to 10 inches deep and 6 feet long. : Repair.	36.967865 ° -120.258157 °	0.000000 ° 0.000000 °	0038 Y

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² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN2_2012_a_####.
⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
37			Levee Embankments	Animal Control		U	Several large diameter holes 8 inches in diameter at least 48 inches deep. Two sites within 100 feet. Both with multiple holes on both sides of levee. : Repair holes and control rodents	36.967755 ° -120.259350 °	0.000000 ° 0.000000 °	0039 Y
38			Levee Embankments	Encroachments		U	Pipe through levee, half filled with sediment (in levee log). Slide gate in riser on WS hinge. Headwalls on both sides. : Video inspect pipe through levee. Ensure proper function of slide gate. Confirm permit status.	36.967602 ° -120.261385 °	0.000000 ° 0.000000 °	0040 Y
39			Levee Embankments	Encroachments		U	Pile of brush within 15 feet of levee toe. : Remove.	36.967498 ° -120.262657 °	0.000000 ° 0.000000 °	0041 Y
40			Levee Embankments	Animal Control		U	Several large diameter holes up to 6 feet deep. : Repair holes and control rodents.	36.967480 ° -120.263430 °	0.000000 ° 0.000000 °	0042 Y
41			Levee Embankments	Seepage		U	Unrepaired seepage ring on LS slope. Rodent hole at least 17 feet deep and 16 inches in diameter in same location as seepage. : Repair seepage and remove sandbags.	36.967510 ° -120.268688 °	0.000000 ° 0.000000 °	0044 Y
42			Levee Embankments	Encroachments		A	Utility line over crown. : NA	36.967518 ° -120.274068 °	0.000000 ° 0.000000 °	0045 Y
43			Levee Embankments	Encroachments		U	Farming cut into LS toe of levee up to 18 inches. : Repair cut. Limit activity within 15 feet of toe.	36.967500 ° -120.266170 °	36.967530 ° -120.274020 °	0046 Y
44			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on crown and LS slope up to 4 feet tall. Prevents inspection and hinders operation. : Remove unwanted vegetation.	36.967640 ° -120.265490 °	36.967490 ° -120.274900 °	0047 Y
45			Levee Embankments	Animal Control		U	Rodent holes on LS and crown at least 4 feet deep. : Repair holes and control rodents.	36.967455 ° -120.298445 °	0.000000 ° 0.000000 °	0048 Y
46			Levee Embankments	Animal Control		U	Rodent hole at least 9 feet deep. Greater than 2 cf of displaced material. : Repair holes and control rodents.	36.967435 ° -120.299555 °	0.000000 ° 0.000000 °	0049 Y
47			Levee Embankments	Encroachments		U	Corn planted within 15 feet of LS toe. Includes irrigation pipes. Inhibits inspection and operation. : Discontinue farming wtihin 15 feet of levee toe.	36.967270 ° -120.301030 °	36.967170 ° -120.273920 °	0050 Y
48			Levee Embankments	Animal Control		U	Several rodent holes 6 inches in diameter and at least 6 feet deep. : Repair holes and control rodents.	36.967332 ° -120.309065 °	0.000000 ° 0.000000 °	0051 Y
49			Levee Embankments	Encroachments		A	Utility line crossing of levee at least 20 feet above crown. : NA	36.967412 ° -120.309770 °	0.000000 ° 0.000000 °	0052 Y
50			Levee Embankments	Encroachments		U	Cut into LS toe of levee up to 9 inches deep. : Repair to as-built line and grade.	36.967270 ° -120.301000 °	36.967170 ° -120.310220 °	0053 Y
51			Levee Embankments	Animal Control		U	Multitude of small rodent holes on both slopes up to 3 feet deep. Rodents may be using pipe stored at levee toe. : Repair and control rodents. Remove pipe.	36.967400 ° -120.311645 °	0.000000 ° 0.000000 °	0054 Y
52			Levee Embankments	Encroachments		U	Metal standpipe at LS toe with unknown use and direction. : Confirm permit status.	36.967352 ° -120.315692 °	0.000000 ° 0.000000 °	0055 Y
53			Levee Embankments	Animal Control		U	Holes up to 2 feet deep. : Repair holes and control rodents.	36.967320 ° -120.316587 °	0.000000 ° 0.000000 °	0056 Y
54			Levee Embankments	Encroachments		U	Utility line crossing at least 30 feet above crown. Utility pole on WS slope. : Confirm permit status.	36.967225 ° -120.328013 °	0.000000 ° 0.000000 °	0057 Y

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US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
55			Flood Damage Reduction Channels	Encroachments		M	12th road bridge over channel. Concrete appears to be in good condition. Bed erosion may be impacting pier stability. Rip rap on banks. : Monitor scour at piers.	36.967218 ° -120.328140 °	0.000000 ° 0.000000 °	0058 Y
56			Levee Embankments	Depressions/ Rutting		U	Tire rutting up to 6 inches on LS slope at turn around. : Repair.	36.967213 ° -120.337450 °	0.000000 ° 0.000000 °	0059 Y
57			Levee Embankments	Depressions/ Rutting		M	Rutting on LS slope less than 6 inches deep 20 feet long. : Repair.	36.967208 ° -120.346472 °	0.000000 ° 0.000000 °	0060 Y
58			Levee Embankments	Animal Control		U	Rodent hole at least two feet deep. : Repair holes and control rodents.	36.967210 ° -120.346468 °	0.000000 ° 0.000000 °	0061 Y
59			Levee Embankments	Seepage		U	Unrepaired seepage through levee with sandbag ring on LS. Rodent holes on both sides of levee in same location as unrepaired seepage. : Repair seepage and remove sandbags.	36.967202 ° -120.349072 °	0.000000 ° 0.000000 °	0062 Y
60			Levee Embankments	Seepage		U	Two unrepaired seepage points with sandbag ring on LS, 35 feet long and 3 feet high. : Repair seepage and remove sandbags.	36.967182 ° -120.350882 °	0.000000 ° 0.000000 °	0063 Y
61			Levee Embankments	Encroachments		U	Two tanks and large pile of debris within 15 feet of levee toe. : Remove.	36.967295 ° -120.351977 °	0.000000 ° 0.000000 °	0064 Y
62			Levee Embankments	Encroachments		U	Several bee boxes within 15 feet of levee toe. Impairs operation and maintenance. : Remove.	36.968998 ° -120.354308 °	0.000000 ° 0.000000 °	0065 Y
63			Levee Embankments	Animal Control		U	Extensive networks of rodent burrows. Animal control is ineffective. : Repair holes and control rodents.	36.966940 ° -120.310540 °	36.968230 ° -120.354430 °	0066 Y
64			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation on WS slope up to 4 feet tall obscures inspection. Sporadic tall weeds on crown and LS slope. : Remove unwanted vegetation.	36.967500 ° -120.310540 °	36.967470 ° -120.351960 °	0067 Y
65			Flood Damage Reduction Channels	Encroachments		U	5 piles of sand over 4 feet tall in channel. : Ensure channel conveyance capacity.	36.972572 ° -120.357230 °	0.000000 ° 0.000000 °	0068 Y
66			Levee Embankments	Depressions/ Rutting		U	Large hole of unknown origin at LS toe. 10-15 feet deep and 50 feet long. May provide seepage pathway. Possibly remnant of original Fresno River channel. : Fill hole within 15 foot buffer.	36.975085 ° -120.360382 °	0.000000 ° 0.000000 °	0069 Y
67			Levee Embankments	Encroachments		U	Overhead utility line at least 15 feet above crown with pole on WS slope. : Confirm permit status.	36.976985 ° -120.366327 °	0.000000 ° 0.000000 °	0070 Y
68			Levee Embankments	Encroachments		M	Boat on LS slope. : Remove.	36.976912 ° -120.367515 °	0.000000 ° 0.000000 °	0071 Y
69			Levee Embankments	Unwanted Vegetation Growth		U	Mature tree on LS slope. : NA	36.976908 ° -120.367502 °	0.000000 ° 0.000000 °	0072 Y
70			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation not maintained on slopes or crown up to 4 feet tall. : Remove unwanted vegetation.	36.969710 ° -120.354500 °	36.976930 ° -120.367250 °	0073 Y
71			Levee Embankments	Encroachments		M	Barb wire fence (3 strands) within 15 feet of LS toe. : Confirm permit status.	36.969590 ° -120.354840 °	36.976870 ° -120.367550 °	0074 Y
72			Levee Embankments	Animal Control		U	Animal control program is not effective throughout entire levee. : Repair holes and control rodents. Establish an effective animal control program.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0075

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[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_FRN2_2012_a_####.
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US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Piled cuttings on crown that blocks view of WS slope.

USACE_CESPK_FRN2_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.972313 ° -120.213093 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Piled cuttings on crown that blocks view of WS slope.

USACE_CESPK_FRN2_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
36.972313 ° -120.213093 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Burrows on both sides of levee. Six inch maximum diameter and at least 12 inches deep.

USACE_CESPK_FRN2_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.972133 ° -120.214360 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Burrows on both sides of levee. Six inch maximum diameter and at least 12 inches deep.

USACE_CESPK_FRN2_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
36.972133 ° -120.214360 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several small rodent burrows less then 12 inches deep, some active.

USACE_CESPK_FRN2_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.972068 ° -120.215232 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: 3-4 small rodent holes up to 3 feet deep.

USACE_CESPK_FRN2_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.971840 ° -120.216387 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Brush piled on WS slope.

USACE_CESPK_FRN2_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.971437 ° -120.218225 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Low water crossing with ramps on both banks and levees.

USACE_CESPK_FRN2_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.971332 ° -120.219182 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Low water crossing with ramps on both banks and levees.

USACE_CESPK_FRN2_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
36.971332 ° -120.219182 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Piled brush obscures crown and WS slope.

USACE_CESPK_FRN2_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.971337 ° -120.219330 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Utility pole on LS hinge.

USACE_CESPK_FRN2_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.971490 ° -120.220437 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with headwall on WS. Closed flapgate on WS.

USACE_CESPK_FRN2_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.971485 ° -120.220337 °	0.000000 ° 0.000000 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with headwall on WS. Closed flapgate on WS.

USACE_CESPK_FRN2_2012_a_0009_2.jpg

GPS Latitude/Longitude	
Start	End
36.971485 ° -120.220337 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on WS over 12 inches tall. Prevents inspection of slope.

USACE_CESPK_FRN2_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.972700 ° -120.211670 °	36.971500 ° -120.220390 °
Rating³:	U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on WS over 12 inches tall. Prevents inspection of slope.

USACE_CESPK_FRN2_2012_a_0011_2.jpg

GPS Latitude/Longitude	
Start	End
36.972700 ° -120.211670 °	36.971500 ° -120.220390 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows on crown and both slopes. Levee is roughly double width. Holes at least 60 inches deep. 5 inch depression on crown.

USACE_CESPK_FRN2_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.971930 ° -120.221523 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows on crown and both slopes. Levee is roughly double width. Holes at least 60 inches deep. 5 inch depression on crown.

USACE_CESPK_FRN2_2012_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
36.971930 ° -120.221523 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows on crown and both slopes. Levee is roughly double width. Holes at least 60 inches deep. 5 inch depression on crown.

USACE_CESPK_FRN2_2012_a_0012_3.jpg

GPS Latitude/Longitude	
Start	End
36.971930 ° -120.221523 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree with multiple trunks up to 2 inches in diameter on WS slope.

USACE_CESPK_FRN2_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.972300 ° -120.222985 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Tree with multiple trunks up to 3 inches in diameter within 15 feet of levee toe.

USACE_CESPK_FRN2_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.972352 ° -120.223657 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Berm on LS varies in height and width. Silty sandy material. Ditch between levee and berm in places up to 3 feet deep.

USACE_CESPK_FRN2_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.971280 ° -120.229740 °	36.972450 ° -120.211730 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Berm on LS varies in height and width. Silty sandy material. Ditch between levee and berm in places up to 3 feet deep.

USACE_CESPK_FRN2_2012_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
36.971280 ° -120.229740 °	36.972450 ° -120.211730 °

Rating³: M

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Dozens of burrows on both sides of levee. Appear small and shallow. Typical of area.

USACE_CESPK_FRN2_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.970978 ° -120.231830 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Dozens of burrows on both sides of levee. Appear small and shallow. Typical of area.

USACE_CESPK_FRN2_2012_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
36.970978 ° -120.231830 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Large pile of sand in channel, up to 6 feet tall, impairs channel capacity.

USACE_CESPK_FRN2_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
36.970758 ° -120.232835 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows on both sides of levee up to 12 inches deep.

USACE_CESPK_FRN2_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.970572 ° -120.232685 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows on both sides of levee up to 12 inches deep.

USACE_CESPK_FRN2_2012_a_0019_2.jpg

GPS Latitude/Longitude	
Start	End
36.970572 ° -120.232685 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Erosion within 35 feet of WS toe.

USACE_CESPK_FRN2_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
36.969895 ° -120.234040 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation and brush on both slopes and crown up to 8 feet tall.

USACE_CESPK_FRN2_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
36.969430 ° -120.234260 °	36.971440 ° -120.229660 °
Rating³: U	

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation and brush on both slopes and crown up to 8 feet tall.

USACE_CESPK_FRN2_2012_a_0021_2.jpg

GPS Latitude/Longitude	
Start	End
36.969430 ° -120.234260 °	36.971440 ° -120.229660 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Seepage

Remarks: Former Fresno River channel bed at toe of levee. Ponding up to 2 feet, could possibly detain up to 8 feet deep.

USACE_CESPK_FRN2_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
36.969498 °	0.000000 °
-120.234422 °	0.000000 °

Rating³: M

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Pallets, tires, and truck parts on LS levee slope.

USACE_CESPK_FRN2_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
36.968915 °	0.000000 °
-120.237207 °	0.000000 °

Rating³: M

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Access ramp on WS cuts into levee prism up to 6 inches.

USACE_CESPK_FRN2_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.968972 °	0.000000 °
-120.237408 °	0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Power line over levee. More than 15 feet above crown.

USACE_CESPK_FRN2_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
36.968798 ° -120.238204 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser on WS hinge. Open on water side and partially blocked with sediment. Obscured by thick brush on WS.

USACE_CESPK_FRN2_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.968855 ° -120.239080 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser on WS hinge. Open on water side and partially blocked with sediment. Obscured by thick brush on WS.

USACE_CESPK_FRN2_2012_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
36.968855 ° -120.239080 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser on WS hinge. Open on water side and partially blocked with sediment. Obscured by thick brush on WS.

USACE_CESPK_FRN2_2012_a_0026_3.jpg

GPS Latitude/Longitude	
Start	End
36.968855 ° -120.239080 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: LS toe cut by road up to 6 inches into prism.

USACE_CESPK_FRN2_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.968862 ° -120.240763 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several burrows up to 12 inches deep.

USACE_CESPK_FRN2_2012_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
36.968908 ° -120.241957 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

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Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number[1]	0029
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several holes up to 24 inches deep.

USACE_CESPK_FRN2_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.968808 ° -120.243987 °	0.000000 ° 0.000000 °

Rating[3]: M

LIS Issue Number[1]	0030
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature cottonwood and smaller tree within 15 feet of WS toe.

USACE_CESPK_FRN2_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
36.968817 ° -120.245730 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0031
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser at WS hinge. Open riser with rebar protruding on WS partially filled with sediment.

USACE_CESPK_FRN2_2012_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.968793 ° -120.247503 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser at WS hinge. Open riser with rebar protruding on WS partially filled with sediment.

USACE_CESPK_FRN2_2012_a_0031_2.jpg

GPS Latitude/Longitude	
Start	End
36.968793 ° -120.247503 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee with slide gate in riser at WS hinge. Open riser with rebar protruding on WS partially filled with sediment.

USACE_CESPK_FRN2_2012_a_0031_3.jpg

GPS Latitude/Longitude	
Start	End
36.968793 ° -120.247503 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Stream gaging trolley across levee and channel. Support pole on LS hinge. Cable less than 15 feet over crown. Noted in O&M manual.

USACE_CESPK_FRN2_2012_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
36.968772 ° -120.249972 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Stream gaging trolley across levee and channel. Support pole on LS hinge. Cable less than 15 feet over crown. Noted in O&M manual.

USACE_CESPK_FRN2_2012_a_0032_2.jpg

GPS Latitude/Longitude	
Start	End
36.968772 ° -120.249972 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature tree within 15 feet of WS toe.

USACE_CESPK_FRN2_2012_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
36.968673 ° -120.251645 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee just upstream of diversion dam. Slide gate in riser on WS hinge. Headwall and wing walls on WS. Pipe end open.

USACE_CESPK_FRN2_2012_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
36.968015 ° -120.255537 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee just upstream of diversion dam. Slide gate in riser on WS hinge. Headwall and wing walls on WS. Pipe end open.

USACE_CESPK_FRN2_2012_a_0034_2.jpg

GPS Latitude/Longitude	
Start	End
36.968015 ° -120.255537 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee just upstream of diversion dam. Slide gate in riser on WS hinge. Headwall and wing walls on WS. Pipe end open.

USACE_CESPK_FRN2_2012_a_0034_3.jpg

GPS Latitude/Longitude	
Start	End
36.968015 ° -120.255537 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Diversion dam and bridge across channel noted in O&M manual. Concrete appears to be in good condition. No significant debris.

USACE_CESPK_FRN2_2012_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
36.967972 ° -120.255553 °	0.000000 ° 0.000000 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Diversion dam and bridge across channel noted in O&M manual. Concrete appears to be in good condition. No significant debris.

USACE_CESPK_FRN2_2012_a_0035_2.jpg

GPS Latitude/Longitude	
Start	End
36.967972 ° -120.255553 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Diversion dam and bridge across channel noted in O&M manual. Concrete appears to be in good condition. No significant debris.

USACE_CESPK_FRN2_2012_a_0035_3.jpg

GPS Latitude/Longitude	
Start	End
36.967972 ° -120.255553 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Diversion dam and bridge across channel noted in O&M manual. Concrete appears to be in good condition. No significant debris.

USACE_CESPK_FRN2_2012_a_0035_4.jpg

GPS Latitude/Longitude	
Start	End
36.967972 ° -120.255553 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: 7 inch deep slope failure. 8 feet wide with bulge at toe.

USACE_CESPK_FRN2_2012_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
36.967852 ° -120.257428 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes at least 5 feet deep

USACE_CESPK_FRN2_2012_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
36.967850 ° -120.257587 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes at least 5 feet deep

USACE_CESPK_FRN2_2012_a_0037_2.jpg

GPS Latitude/Longitude	
Start	End
36.967850 ° -120.257587 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control
Remarks: Several large diameter holes at least 5 feet deep	

USACE_CESPK_FRN2_2012_a_0037_3.jpg

GPS Latitude/Longitude	
Start	End
36.967850 ° -120.257587 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting
Remarks: Tire rutting up to 10 inches deep and 6 feet long.	

USACE_CESPK_FRN2_2012_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
36.967865 ° -120.258157 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Remarks: Several large diameter holes 8 inches in diameter at least 48 inches deep. Two sites within 100 feet. Both with multiple holes on both sides of levee.	

USACE_CESPK_FRN2_2012_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
36.967755 ° -120.259350 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes 8 inches in diameter at least 48 inches deep. Two sites within 100 feet. Both with multiple holes on both sides of levee.

USACE_CESPK_FRN2_2012_a_0039_2.jpg

GPS Latitude/Longitude	
Start	End
36.967755 ° -120.259350 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes 8 inches in diameter at least 48 inches deep. Two sites within 100 feet. Both with multiple holes on both sides of levee.

USACE_CESPK_FRN2_2012_a_0039_3.jpg

GPS Latitude/Longitude	
Start	End
36.967755 ° -120.259350 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee, half filled with sediment (in levee log). Slide gate in riser on WS hinge. Headwalls on both sides.

USACE_CESPK_FRN2_2012_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
36.967602 ° -120.261385 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee, half filled with sediment (in levee log). Slide gate in riser on WS hinge. Headwalls on both sides.

USACE_CESPK_FRN2_2012_a_0040_2.jpg

GPS Latitude/Longitude	
Start	End
36.967602 ° -120.261385 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee, half filled with sediment (in levee log). Slide gate in riser on WS hinge. Headwalls on both sides.

USACE_CESPK_FRN2_2012_a_0040_3.jpg

GPS Latitude/Longitude	
Start	End
36.967602 ° -120.261385 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Pile of brush within 15 feet of levee toe.

USACE_CESPK_FRN2_2012_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
36.967498 ° -120.262657 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes up to 6 feet deep.

USACE_CESPK_FRN2_2012_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
36.967480 ° -120.263430 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several large diameter holes up to 6 feet deep.

USACE_CESPK_FRN2_2012_a_0042_2.jpg

GPS Latitude/Longitude	
Start	End
36.967480 ° -120.263430 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Unrepaired seepage ring on LS slope. Rodent hole at least 17 feet deep and 16 inches in diameter in same location as seepage.

USACE_CESPK_FRN2_2012_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
36.967510 ° -120.268688 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Unrepaired seepage ring on LS slope. Rodent hole at least 17 feet deep and 16 inches in diameter in same location as seepage.

USACE_CESPK_FRN2_2012_a_0044_2.jpg

GPS Latitude/Longitude	
Start	End
36.967510 ° -120.268688 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Unrepaired seepage ring on LS slope. Rodent hole at least 17 feet deep and 16 inches in diameter in same location as seepage.

USACE_CESPK_FRN2_2012_a_0044_3.jpg

GPS Latitude/Longitude	
Start	End
36.967510 ° -120.268688 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Utility line over crown.

USACE_CESPK_FRN2_2012_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
36.967518 ° -120.274068 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Farming cut into LS toe of levee up to 18 inches.

USACE_CESPK_FRN2_2012_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
36.967500 ° -120.266170 °	36.967530 ° -120.274020 °
Rating³: U	

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on crown and LS slope up to 4 feet tall. Prevents inspection and hinders operation.

USACE_CESPK_FRN2_2012_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
36.967640 ° -120.265490 °	36.967490 ° -120.274900 °
Rating³: U	

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and crown at least 4 feet deep.

USACE_CESPK_FRN2_2012_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
36.967455 ° -120.298445 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and crown at least 4 feet deep.

USACE_CESPK_FRN2_2012_a_0048_2.jpg

GPS Latitude/Longitude	
Start	End
36.967455 ° -120.298445 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent holes on LS and crown at least 4 feet deep.

USACE_CESPK_FRN2_2012_a_0048_3.jpg

GPS Latitude/Longitude	
Start	End
36.967455 ° -120.298445 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent hole at least 9 feet deep. Greater than 2 cf of displaced material.

USACE_CESPK_FRN2_2012_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
36.967435 ° -120.299555 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent hole at least 9 feet deep. Greater than 2 cf of displaced material.

USACE_CESPK_FRN2_2012_a_0049_2.jpg

GPS Latitude/Longitude	
Start	End
36.967435 ° -120.299555 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Corn planted within 15 feet of LS toe. Includes irrigation pipes. Inhibits inspection and operation.

USACE_CESPK_FRN2_2012_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
36.967270 ° -120.301030 °	36.967170 ° -120.273920 °

Rating³: U

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Corn planted within 15 feet of LS toe. Includes irrigation pipes. Inhibits inspection and operation.

USACE_CESPK_FRN2_2012_a_0050_2.jpg

GPS Latitude/Longitude	
Start	End
36.967270 ° -120.301030 °	36.967170 ° -120.273920 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Corn planted within 15 feet of LS toe. Includes irrigation pipes. Inhibits inspection and operation.

USACE_CESPK_FRN2_2012_a_0050_3.jpg

GPS Latitude/Longitude	
Start	End
36.967270 ° -120.301030 °	36.967170 ° -120.273920 °

Rating³: U

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several rodent holes 6 inches in diameter and at least 6 feet deep.

USACE_CESPK_FRN2_2012_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
36.967332 ° -120.309065 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several rodent holes 6 inches in diameter and at least 6 feet deep.

USACE_CESPK_FRN2_2012_a_0051_2.jpg

GPS Latitude/Longitude	
Start	End
36.967332 ° -120.309065 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0052
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Utility line crossing of levee at least 20 feet above crown.

USACE_CESPK_FRN2_2012_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
36.967412 ° -120.309770 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Cut into LS toe of levee up to 9 inches deep.

USACE_CESPK_FRN2_2012_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
36.967270 ° -120.301000 °	36.967170 ° -120.310220 °

Rating³: U

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Multitude of small rodent holes on both slopes up to 3 feet deep. Rodents may be using pipe stored at levee toe.

USACE_CESPK_FRN2_2012_a_0054_1.jpg

GPS Latitude/Longitude	
Start	End
36.967400 ° -120.311645 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Multitude of small rodent holes on both slopes up to 3 feet deep. Rodents may be using pipe stored at levee toe.

USACE_CESPK_FRN2_2012_a_0054_2.jpg

GPS Latitude/Longitude	
Start	End
36.967400 ° -120.311645 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Multitude of small rodent holes on both slopes up to 3 feet deep. Rodents may be using pipe stored at levee toe.

USACE_CESPK_FRN2_2012_a_0054_3.jpg

GPS Latitude/Longitude	
Start	End
36.967400 ° -120.311645 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Metal standpipe at LS toe with unknown use and direction.

USACE_CESPK_FRN2_2012_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
36.967352 ° -120.315692 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Holes up to 2 feet deep.

USACE_CESPK_FRN2_2012_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
36.967320 ° -120.316587 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Utility line crossing at least 30 feet above crown. Utility pole on WS slope.

USACE_CESPK_FRN2_2012_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
36.967225 ° -120.328013 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: 12th road bridge over channel. Concrete appears to be in good condition. Bed erosion may be impacting pier stability. Rip rap on banks.

USACE_CESPK_FRN2_2012_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
36.967218 ° -120.328140 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: 12th road bridge over channel. Concrete appears to be in good condition. Bed erosion may be impacting pier stability. Rip rap on banks.

USACE_CESPK_FRN2_2012_a_0058_2.jpg

GPS Latitude/Longitude	
Start	End
36.967218 ° -120.328140 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: 12th road bridge over channel. Concrete appears to be in good condition. Bed erosion may be impacting pier stability. Rip rap on banks.

USACE_CESPK_FRN2_2012_a_0058_3.jpg

GPS Latitude/Longitude	
Start	End
36.967218 ° -120.328140 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: 12th road bridge over channel. Concrete appears to be in good condition. Bed erosion may be impacting pier stability. Rip rap on banks.

USACE_CESPK_FRN2_2012_a_0058_4.jpg

GPS Latitude/Longitude	
Start	End
36.967218 ° -120.328140 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Tire rutting up to 6 inches on LS slope at turn around.

USACE_CESPK_FRN2_2012_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
36.967213 ° -120.337450 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0060
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on LS slope less than 6 inches deep 20 feet long.

USACE_CESPK_FRN2_2012_a_0060_1.jpg

GPS Latitude/Longitude	
Start	End
36.967208 ° -120.346472 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0060
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Rutting on LS slope less than 6 inches deep 20 feet long.

USACE_CESPK_FRN2_2012_a_0060_2.jpg

GPS Latitude/Longitude	
Start	End
36.967208 ° -120.346472 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0061
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent hole at least two feet deep.

USACE_CESPK_FRN2_2012_a_0061_1.jpg

GPS Latitude/Longitude	
Start	End
36.967210 ° -120.346468 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Unrepaired seepage through levee with sandbag ring on LS. Rodent holes on both sides of levee in same location as unrepaired seepage.

USACE_CESPK_FRN2_2012_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
36.967202 ° -120.349072 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Unrepaired seepage through levee with sandbag ring on LS. Rodent holes on both sides of levee in same location as unrepaired seepage.

USACE_CESPK_FRN2_2012_a_0062_2.jpg

GPS Latitude/Longitude	
Start	End
36.967202 ° -120.349072 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Two unrepaired seepage points with sandbag ring on LS, 35 feet long and 3 feet high.

USACE_CESPK_FRN2_2012_a_0063_1.jpg

GPS Latitude/Longitude	
Start	End
36.967182 ° -120.350882 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Two unrepaired seepage points with sandbag ring on LS, 35 feet long and 3 feet high.

USACE_CESPK_FRN2_2012_a_0063_2.jpg

GPS Latitude/Longitude	
Start	End
36.967182 ° -120.350882 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Remarks: Two unrepaired seepage points with sandbag ring on LS, 35 feet long and 3 feet high.

USACE_CESPK_FRN2_2012_a_0063_3.jpg

GPS Latitude/Longitude	
Start	End
36.967182 ° -120.350882 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0064
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Two tanks and large pile of debris within 15 feet of levee toe.

USACE_CESPK_FRN2_2012_a_0064_1.jpg

GPS Latitude/Longitude	
Start	End
36.967295 ° -120.351977 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0065
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Several bee boxes within 15 feet of levee toe. Impairs operation and maintenance.

USACE_CESPK_FRN2_2012_a_0065_1.jpg

GPS Latitude/Longitude	
Start	End
36.968998 ° -120.354308 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_1.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_2.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °

Rating³: U

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_3.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °

Rating³: U

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_4.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_5.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °

Rating³: U

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive networks of rodent burrows. Animal control is ineffective.

USACE_CESPK_FRN2_2012_a_0066_6.jpg

GPS Latitude/Longitude	
Start	End
36.966940 ° -120.310540 °	36.968230 ° -120.354430 °

Rating³: U

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on WS slope up to 4 feet tall obscures inspection. Sporadic tall weeds on crown and LS slope.

USACE_CESPK_FRN2_2012_a_0067_1.jpg

GPS Latitude/Longitude	
Start	End
36.967500 ° -120.310540 °	36.967470 ° -120.351960 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation on WS slope up to 4 feet tall obscures inspection. Sporadic tall weeds on crown and LS slope.

USACE_CESPK_FRN2_2012_a_0067_2.jpg

GPS Latitude/Longitude	
Start	End
36.967500 ° -120.310540 °	36.967470 ° -120.351960 °
Rating³: U	

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: 5 piles of sand over 4 feet tall in channel.

USACE_CESPK_FRN2_2012_a_0068_1.jpg

GPS Latitude/Longitude	
Start	End
36.972572 ° -120.357230 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Large hole of unknown origin at LS toe. 10-15 feet deep and 50 feet long. May provide seepage pathway. Possibly remnant of original Fresno River channel.

USACE_CESPK_FRN2_2012_a_0069_1.jpg

GPS Latitude/Longitude	
Start	End
36.975085 ° -120.360382 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Overhead utility line at least 15 feet above crown with pole on WS slope.

USACE_CESPK_FRN2_2012_a_0070_1.jpg

GPS Latitude/Longitude	
Start	End
36.976985 ° -120.366327 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Boat on LS slope.

USACE_CESPK_FRN2_2012_a_0071_1.jpg

GPS Latitude/Longitude	
Start	End
36.976912 ° -120.367515 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0072
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature tree on LS slope.

USACE_CESPK_FRN2_2012_a_0072_1.jpg

GPS Latitude/Longitude	
Start	End
36.976908 ° -120.367502 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Fresno River - left bank (FRN2)	Left	9.03	USACE	9/17/2012 9/17/2012	Ryan Larson

LIS Issue Number¹	0073
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation not maintained on slopes or crown up to 4 feet tall.

USACE_CESPK_FRN2_2012_a_0073_1.jpg

GPS Latitude/Longitude	
Start	End
36.969710 ° -120.354500 °	36.976930 ° -120.367250 °
Rating³: U	

LIS Issue Number¹	0074
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Barb wire fence (3 strands) within 15 feet of LS toe.

USACE_CESPK_FRN2_2012_a_0074_1.jpg

GPS Latitude/Longitude	
Start	End
36.969590 ° -120.354840 °	36.976870 ° -120.367550 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: LSJLD - Unit 17, Chowchilla Bypass right bank above Fresno R/LSJLD-Units 17, 23, Fresno R, Chowchilla Byp

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Paul Risher, Justin Hake

Date of Inspection: 9/17/2012 - 9/19/2012

Inspection Report Prepared By: Justin Hake

Date Report Prepared: 9/25/2012

Internal Technical Review (for Periodic Inspections) By:

Date of ITR:

Final Approval By:

Date Approved:

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	A	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**N/A**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	A	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	A	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating		Rating Guidelines	Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	N/A	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	A	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	**A**	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	M	**A**	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	U	**A**	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	**A**	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	**M**	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	**M**	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	**A**	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	M	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Concrete Surfaces		M	Rebar exposed on teeth of structure. : Repair concrete.	36.975890 ° -120.374863 °	0.000000 ° 0.000000 °	0001 Y
2			Flood Damage Reduction Channels	Slab and Monolith Joints		M	Waterstop visible. : NA	36.976032 ° -120.374843 °	0.000000 ° 0.000000 °	0002
3			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Slight movement in RB wall of control structure less than half an inch. : Monitor movement.	36.975930 ° -120.374855 °	0.000000 ° 0.000000 °	0003 Y
4			Flood Damage Reduction Channels	Concrete Struct. Tilt/Slide/Settle		M	Structure appears to be settling on S end, LB. Directing flows to left side of channel. Scour downstream of structure on LB end. : Monitor settlement and scour in channel.	36.975411 ° -120.374912 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Encroachments		A	Power line crosses crown perpendicular to levee. : NA	36.976452 ° -120.366847 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Animal Control		U	Rodent hole in levee crown and on each slope 2-3 inches in diameter. : Repair holes and control rodents.	36.976462 ° -120.366198 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Animal Control		M	Rodent holes across crown less than 6 inches deep. Collapsed burrows. Rodent holes on LS slope. : Repair holes and control rodents.	36.975808 ° -120.362380 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Animal Control		U	Rodent holes on both slopes at least 2.5 feet deep. : Repair holes and control rodents.	36.975528 ° -120.361947 °	0.000000 ° 0.000000 °	0008 Y
9			Levee Embankments	Encroachments		M	Cattle trails on LS slope. Less than 6 inches deep. : Monitor and repair as necessary.	36.971670 ° -120.357040 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Animal Control		U	Rodent holes on both slopes, at least 2.5 feet deep. : Repair holes and control rodents.	36.971055 ° -120.356297 °	0.000000 ° 0.000000 °	0010 Y
11			Levee Embankments	Depressions/ Rutting		M	Rutting on WS slope less than 6 inches deep. : Repair ruts.	36.971010 ° -120.356268 °	0.000000 ° 0.000000 °	0011 Y
12			Levee Embankments	Animal Control		U	Rodent holes on both slopes. One hole as deep as 4.5 feet. : Repair holes and control rodents.	36.968592 ° -120.355278 °	0.000000 ° 0.000000 °	0012 Y
13			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Repair holes and control rodents.	36.968005 ° -120.355408 °	0.000000 ° 0.000000 °	0014 Y
14			Levee Embankments	Encroachments		U	Cattle trails on both slopes. Some cut into slope approximately 8 inches. : Restore to as-built line and grade.	36.952780 ° -120.349030 °	36.969730 ° -120.354990 °	0015 Y
15			Levee Embankments	Unwanted Vegetation Growth		U	Brush on both slopes obscures visibility for inspection. : Remove unwanted vegetation.	36.952840 ° -120.349100 °	36.976500 ° -120.374730 °	0016 Y
16			Levee Embankments	Animal Control		M	Rodent holes across crown. Collapsed burrows. : Repair holes, control rodents,and regrade road.	36.955703 ° -120.350953 °	0.000000 ° 0.000000 °	0017 Y
17			Levee Embankments	Encroachments		A	Power line crosses crown perpendicular to levee. : NA	36.952482 ° -120.348941 °	0.000000 ° 0.000000 °	0018 Y
18			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS. Landside has accumulated vegetation. Headwalls on both sides. : Video inspect pipe through levee. Confirm permit status.	36.952218 ° -120.348768 °	0.000000 ° 0.000000 °	0019 Y
19			Levee Embankments	Encroachments		U	Debris build up at culverts on upstream side of Ave 14 crossing. Drainage canal is on LS of levee in O&M manual, section 6140. : Remove debris.	36.952388 ° -120.348439 °	0.000000 ° 0.000000 °	0020 Y

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[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
20			Levee Embankments	Animal Control		M	Rodent holes on LS slope. : Repair holes and control rodents.	36.949112 ° -120.346853 °	0.000000 ° 0.000000 °	0021
21			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Repair holes and control rodents.	36.947627 ° -120.345962 °	0.000000 ° 0.000000 °	0022 Y
22			Levee Embankments	Animal Control		M	Rodent holes on LS slope, at least 2 feet deep. : Repair holes and control rodents.	36.940810 ° -120.342980 °	0.000000 ° 0.000000 °	0023 Y
23			Levee Embankments	Depressions/ Rutting		M	Rutting on WS slope. Less than 6 inches deep. : Repair rutting.	36.940027 ° -120.342682 °	0.000000 ° 0.000000 °	0024 Y
24			Levee Embankments	Animal Control		M	Rodent holes on LS slope at least 2 feet deep, 4 inches in diameter. : Repair holes and control rodents.	36.935383 ° -120.340943 °	0.000000 ° 0.000000 °	0025
25			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Repair holes and control rodents.	36.932883 ° -120.340038 °	0.000000 ° 0.000000 °	0026 Y
26			Levee Embankments	Encroachments		A	Power line crosses crown perpendicular to levee. Poles in floodway. : Confirm permit status.	36.930768 ° -120.339249 °	0.000000 ° 0.000000 °	0027 Y
27			Levee Embankments	Animal Control		M	Rodent holes on LS slope. : Repair holes and control rodents.	36.925863 ° -120.337442 °	0.000000 ° 0.000000 °	0028
28			Levee Embankments	Encroachments		U	Power line crosses crown perpendicular to levee. Pole in WS slope. 2 short poles in vicinity at WS toe. : Confirm permit status.	36.923500 ° -120.336441 °	0.000000 ° 0.000000 °	0029 Y
29			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS. Concrete deteriorating on LS headwall. Possibly from shooting activity. Tumbleweed build up on LS of pipe. : Confirm permit status. Video inspect pipe through levee. Restore concrete.	36.923413 ° -120.336650 °	0.000000 ° 0.000000 °	0030 Y
30			Levee Embankments	Encroachments		U	Pipe across crown. Invert above crown elevation. Open on both sides. : Cofirm permit status or remove pipe.	36.923458 ° -120.336567 °	0.000000 ° 0.000000 °	0031 Y
31			Levee Embankments	Encroachments		U	Animal tracks on both slopes. Some tracks cut into slope up to 1 foot. : Restore to as-built line and grade.	36.952510 ° -120.348870 °	36.922740 ° -120.336240 °	0033 Y
32			Levee Embankments	Unwanted Vegetation Growth		U	Brush on both slopes obscures visibility for inspection. : Remove unwanted vegetation.	36.952340 ° -120.348870 °	36.938020 ° -120.341700 °	0034 Y
33			Levee Embankments	Encroachments		A	Spoil material against LS slope. In levee log. : NA	36.918320 ° -120.334590 °	36.922080 ° -120.335940 °	0035 Y
34			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Repair holes and control rodents.	36.916475 ° -120.334033 °	0.000000 ° 0.000000 °	0036 Y
35			Levee Embankments	Animal Control		M	Rodent hole on LS slope, at least 3 feet deep. Near bait station. : Repair holes and control rodents.	36.909855 ° -120.331592 °	0.000000 ° 0.000000 °	0037 Y
36			Levee Embankments	Animal Control		M	Rodent holes on LS slope, at least 2 feet deep. : Repair holes and control rodents.	36.908893 ° -120.331237 °	0.000000 ° 0.000000 °	0038 Y
37			Levee Embankments	Animal Control		U	Several 8 to 10 inch diameter holes on both slopes at least 3-6 feet deep. : Repair holes and control rodents.	36.908583 ° -120.331083 °	0.000000 ° 0.000000 °	0039 Y
38			Levee Embankments	Animal Control		U	Large rodent holes on both slopes. : Repair holes and control rodents.	36.907415 ° -120.330695 °	0.000000 ° 0.000000 °	0040 Y

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Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
39			Levee Embankments	Encroachments		A	Spoil berm on LS slope. Noted in levee log. : NA	36.909730 ° -120.331510 °	36.902640 ° -120.328950 °	0041 Y
40			Levee Embankments	Encroachments		A	Power line crosses over crown. Poles in floodway. : Confirm permit status.	36.899887 ° -120.327565 °	0.000000 ° 0.000000 °	0042 Y
41			Levee Embankments	Animal Control		U	Several large diameter rodent holes on LS slope. : Repair holes and control rodents.	36.898285 ° -120.326795 °	0.000000 ° 0.000000 °	0043 Y
42			Levee Embankments	Animal Control		M	Rodent holes in LS slope. : Repair holes and control rodents.	36.896193 ° -120.325740 °	0.000000 ° 0.000000 °	0044 Y
43			Levee Embankments	Encroachments		A	Spoil berm on LS slope. Noted in levee log. : NA	36.890240 ° -120.322810 °	36.892210 ° -120.323770 °	0045 Y
44			Levee Embankments	Encroachments		A	Power line crosses over crown . Poles in floodway. : Confirm permit status.	36.887442 ° -120.321482 °	0.000000 ° 0.000000 °	0046
45			Levee Embankments	Animal Control		U	Several large rodent holes in LS toe. : Repair holes and control rodents.	36.879280 ° -120.318523 °	0.000000 ° 0.000000 °	0047 Y
46			Levee Embankments	Encroachments		A	Power line crosses over crown, poles in floodway. : Confirm permit status.	36.872889 ° -120.317251 °	0.000000 ° 0.000000 °	0048 Y
47			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS. Headwalls on both sides. Pulley system on WS headwall is broken. : Confirm permit status. Video inspect pipe through levee. Repair headwall pulley.	36.872357 ° -120.317168 °	0.000000 ° 0.000000 °	0049 Y
48			Levee Embankments	Depressions/ Rutting		M	Rutting on WS slope less than 6 inches deep. : Repair rutting.	36.872541 ° -120.317301 °	0.000000 ° 0.000000 °	0050 Y
49			Levee Embankments	Encroachments		A	Power line crosses over crown perpendicular to levee. Poles in floodway. : Confirm permit status.	36.865667 ° -120.315903 °	0.000000 ° 0.000000 °	0051
50			Levee Embankments	Encroachments		A	Power line crosses over crown perpendicular to levee. Poles in floodway. : Confirm permit status.	36.851206 ° -120.314147 °	0.000000 ° 0.000000 °	0052
51			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS. Headwalls on both sides. : Confirm permit status. Video inspect pipe through levee.	36.850757 ° -120.314167 °	0.000000 ° 0.000000 °	0053 Y
52			Levee Embankments	Encroachments		U	Trailer on crown at turnout for sheepherder. : Remove before flood season.	36.842681 ° -120.312540 °	0.000000 ° 0.000000 °	0054 Y
53			Levee Embankments	Encroachments		M	Animal tracks on both slopes. Worst area between Firebaugh Blvd and Ripperdan Ave. 4 to 8 inches in LS slope. : Restore to as-built line and grade.	36.872670 ° -120.317170 °	36.841530 ° -120.310830 °	0055
54			Levee Embankments	Encroachments		A	Ramp on slopes. Low water crossing of floodway. Bridge across drainage canal on LS of levee. Permit app # 5128. : Confirm conditions are being met.	36.836689 ° -120.305361 °	0.000000 ° 0.000000 °	0056 Y
55			Levee Embankments	Unwanted Vegetation Growth		U	Thick brush obscures visibility for inspection on both slopes. : Remove unwanted vegetation.	36.846020 ° -120.313880 °	36.837130 ° -120.306000 °	0057 Y
56			Levee Embankments	Encroachments		U	Rodent activity on both slopes. Large hole at LS toe. 7 feet deep, 12 inches wide. : Repair holes and control rodents.	36.827842 ° -120.297790 °	0.000000 ° 0.000000 °	0058 Y
57			Levee Embankments	Depressions/ Rutting		U	Rutting on LS Slope. 7 inches deep. : Restore slope.	36.824425 ° -120.299063 °	0.000000 ° 0.000000 °	0059 Y

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Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
58			Levee Embankments	Depressions/ Rutting		U	Rutting on WS slope. 10 inches deep. : Restore slope.	36.816423 ° -120.302332 °	0.000000 ° 0.000000 °	0060 Y
59			Levee Embankments	Depressions/ Rutting		M	Rutting on WS slope. : Repair slope.	36.813494 ° -120.303608 °	0.000000 ° 0.000000 °	0061
60			Levee Embankments	Animal Control		U	Rodent holes on both slopes. : Repair holes and control rodents.	36.811498 ° -120.304360 °	0.000000 ° 0.000000 °	0062 Y
61			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS. Flap gate propped closed. Headwalls on both sides. : Video inspect pipe through levee. Ensure flap gate functions properly. Confirm permit status.	36.807488 ° -120.306290 °	0.000000 ° 0.000000 °	0063 Y
62			Levee Embankments	Encroachments		A	Low water crossing. Ramp on both slopes. Permit App. # 5128. : NA	36.806741 ° -120.306736 °	0.000000 ° 0.000000 °	0064
63			Levee Embankments	Slope Stability		A	Rock placed on LS slope and toe. : Confirm material placed as berm material.	36.804828 ° -120.307308 °	0.000000 ° 0.000000 °	0065 Y
64			Levee Embankments	Slope Stability		A	Rock placed on LS slope. Slope flattened for rock placement. : Confirm material placed for stability.	36.800533 ° -120.306693 °	0.000000 ° 0.000000 °	0066 Y
65			Levee Embankments	Encroachments		U	Natural gas pipeline crosses under levee and channel, unknown depth. : Confirm pipe condition. Confirm permit status.	36.793310 ° -120.302123 °	0.000000 ° 0.000000 °	0067 Y
66			Levee Embankments	Encroachments		A	Power lines cross over levee perpendicular to crown. : Confirm permit status.	36.793150 ° -120.302035 °	0.000000 ° 0.000000 °	0068 Y
67			Levee Embankments	Encroachments		U	Gas pipeline crosses under levee and channel, unknown depth. : Confirm pipe condition and confirm permit status.	36.792853 ° -120.301828 °	0.000000 ° 0.000000 °	0069 Y
68			Levee Embankments	Encroachments		U	Pipe through levee. Flap gate on WS, stuck open. Headwalls on both sides. Headwall on WS spalling. : Video inspect pipe through levee. Repair flap gate so it closes tightly. Repair headwall. Confirm permit status.	36.789035 ° -120.300727 °	0.000000 ° 0.000000 °	0070 Y
69			Levee Embankments	Unwanted Vegetation Growth		U	Brush on both slopes obscures visibility for inspection. : Trim vegetation.	36.774870 ° -120.284120 °	36.824860 ° -120.298780 °	0071 Y
70			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Sediment removal operations in channel. : Remove sediment according to O&M Manual.	36.780249 ° -120.290541 °	0.000000 ° 0.000000 °	0072 Y
71			Levee Embankments	Encroachments		A	Power line crosses crown. Poles in floodway. : Confirm permit status.	36.775255 ° -120.284472 °	0.000000 ° 0.000000 °	0073
72			Levee Embankments	Encroachments		A	Spoil berm along LS slope. Berm noted in O&M manual and levee log. : NA	36.774870 ° -120.284210 °	36.788630 ° -120.300070 °	0074 Y
73			Flood Damage Reduction Channels	Concrete Surfaces		A	Surfaces look good at control structure. : NA	36.773898 ° -120.284558 °	0.000000 ° 0.000000 °	0075
74			Flood Damage Reduction Channels	Encroachments		M	Railings of control structure damaged. Chowchilla canal bypass control structure. : NA	36.773937 ° -120.284583 °	0.000000 ° 0.000000 °	0076 Y
75			Flood Damage Reduction Channels	Encroachments		U	Trash racks missing from Chowchilla Canal Bypass Control structure. : Replace trash racks.	36.774078 ° -120.284418 °	0.000000 ° 0.000000 °	0077 Y

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Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
76			Flood Damage Reduction Channels	Encroachments		A	Chowchilla Canal Bypass Control Structure. : NA	36.774058 ° -120.284498 °	0.000000 ° 0.000000 °	0078 Y
77			Levee Embankments	Animal Control		U	Animal control program is not effective throughout entire levee. : Repair holes and control rodents. Establish an effective animal control program.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0079
78			Flood Damage Reduction Channels	Concrete Surfaces		A	Firebaugh Blvd. bridge appears to be in good condition. : NA	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0080 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L017_2012_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Minimally Acceptable; Remarks: Rebar exposed on teeth of structure.

USACE_CESPK_L017_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.975890 °	0.000000 °
-120.374863 °	0.000000 °

Rating³: M

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Minimally Acceptable; Remarks: Rebar exposed on teeth of structure.

USACE_CESPK_L017_2012_a_0001_2.jpg

GPS Latitude/Longitude	
Start	End
36.975890 °	0.000000 °
-120.374863 °	0.000000 °

Rating³: M

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Minimally Acceptable; Remarks: Slight movement in RB wall of control structure less than half an inch.

USACE_CESPK_L017_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.975930 °	0.000000 °
-120.374855 °	0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Minimally Acceptable; Remarks: Slight movement in RB wall of control structure less than half an inch.

USACE_CESPK_L017_2012_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
36.975930 ° -120.374855 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Tilting, Sliding or Settlement of Concrete Structures

Rated Item: 6. Tilting, Sliding or Settlement of Concrete Structures; Rating: Minimally Acceptable; Remarks: Structure appears to be settling on S end, LB. Directing flows to left side of channel. Scour downstream of structure on LB end.

USACE_CESPK_L017_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.975411 ° -120.374912 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power line crosses crown perpendicular to levee.

USACE_CESPK_L017_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.976452 ° -120.366847 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent hole in levee crown and on each slope 2-3 inches in diameter.

USACE_CESPK_L017_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.976462 ° -120.366198 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent hole in levee crown and on each slope 2-3 inches in diameter.

USACE_CESPK_L017_2012_a_0006_2.jpg

GPS Latitude/Longitude	
Start	End
36.976462 ° -120.366198 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes across crown less than 6 inches deep. Collapsed burrows. Rodent holes on LS slope.

USACE_CESPK_L017_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.975808 ° -120.362380 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number[1]	0008
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes at least 2.5 feet deep.

USACE_CESPK_L017_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.975528 ° -120.361947 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0008
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes at least 2.5 feet deep.

USACE_CESPK_L017_2012_a_0008_2.jpg

GPS Latitude/Longitude	
Start	End
36.975528 ° -120.361947 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0009
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Cattle trails on LS slope. Less than 6 inches deep.

USACE_CESPK_L017_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.971670 ° -120.357040 °	0.000000 ° 0.000000 °
Rating[3]: M	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable; Remarks: Rodent holes on both slopes, at least 2.5 feet deep.

USACE_CESPK_L017_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.971055 ° -120.356297 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable; Remarks: Rodent holes on both slopes, at least 2.5 feet deep.

USACE_CESPK_L017_2012_a_0010_2.jpg

GPS Latitude/Longitude	
Start	End
36.971055 ° -120.356297 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Rutting on WS slope less than 6 inches deep.

USACE_CESPK_L017_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.971010 ° -120.356268 °	0.000000 ° 0.000000 °

Rating³: M

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes. One hole as deep as 4.5 feet.

USACE_CESPK_L017_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.968592 ° -120.355278 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes. One hole as deep as 4.5 feet.

USACE_CESPK_L017_2012_a_0012_2.jpg

GPS Latitude/Longitude	
Start	End
36.968592 ° -120.355278 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes. One hole as deep as 4.5 feet.

USACE_CESPK_L017_2012_a_0012_3.jpg

GPS Latitude/Longitude	
Start	End
36.968592 ° -120.355278 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes. One hole as deep as 4.5 feet.

USACE_CESPK_L017_2012_a_0012_4.jpg

GPS Latitude/Longitude	
Start	End
36.968592 ° -120.355278 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.968005 ° -120.355408 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0014_2.jpg

GPS Latitude/Longitude	
Start	End
36.968005 ° -120.355408 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0014_3.jpg

GPS Latitude/Longitude	
Start	End
36.968005 ° -120.355408 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle trails on both slopes. Some cut into slope approximately 8 inches.

USACE_CESPK_L017_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
36.952780 ° -120.349030 °	36.969730 ° -120.354990 °
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Cattle trails on both slopes. Some cut into slope approximately 8 inches.

USACE_CESPK_L017_2012_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
36.952780 ° -120.349030 °	36.969730 ° -120.354990 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.	

USACE_CESPK_L017_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.952840 ° -120.349100 °	36.976500 ° -120.374730 °
Rating[3]: U	

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.	

USACE_CESPK_L017_2012_a_0016_2.jpg

GPS Latitude/Longitude	
Start	End
36.952840 ° -120.349100 °	36.976500 ° -120.374730 °
Rating[3]: U	

LIS Issue Number[1]	0016
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.	

USACE_CESPK_L017_2012_a_0016_3.jpg

GPS Latitude/Longitude	
Start	End
36.952840 ° -120.349100 °	36.976500 ° -120.374730 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0016_4.jpg

GPS Latitude/Longitude	
Start	End
36.952840 ° -120.349100 °	36.976500 ° -120.374730 °
Rating³: U	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes across crown. Collapsed burrows.

USACE_CESPK_L017_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.955703 ° -120.350953 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes across crown. Collapsed burrows.

USACE_CESPK_L017_2012_a_0017_2.jpg

GPS Latitude/Longitude	
Start	End
36.955703 ° -120.350953 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power line crosses crown perpendicular to levee.

USACE_CESPK_L017_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
36.952482 ° -120.348941 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Landside has accumulated vegetation. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.952218 ° -120.348768 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Landside has accumulated vegetation. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0019_2.jpg

GPS Latitude/Longitude	
Start	End
36.952218 ° -120.348768 °	0.000000 ° 0.000000 °

Rating³: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Debris build up at culverts on upstream side of Ave 14 crossing. Drainage canal is on LS of levee in O&M manual, section 6140.

USACE_CESPK_L017_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
36.952388 ° -120.348439 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
36.947627 ° -120.345962 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope, at least 2 feet deep.

USACE_CESPK_L017_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
36.940810 ° -120.342980 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope, at least 2 feet deep.

USACE_CESPK_L017_2012_a_0023_2.jpg

GPS Latitude/Longitude	
Start	End
36.940810 ° -120.342980 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Rutting on WS slope. Less than 6 inches deep.

USACE_CESPK_L017_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.940027 ° -120.342682 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.932883 ° -120.340038 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
36.932883 ° -120.340038 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power line crosses crown perpendicular to levee. Poles in floodway.

USACE_CESPK_L017_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.930768 ° -120.339249 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Power line crosses crown perpendicular to levee. Pole in WS slope. 2 short poles in vicinity at WS toe.

USACE_CESPK_L017_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.923500 ° -120.336441 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Concrete deteriorating on LS headwall. Possibly from shooting activity. Tumbleweed build up on LS of pipe.

USACE_CESPK_L017_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
36.923413 ° -120.336650 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Concrete deteriorating on LS headwall. Possibly from shooting activity. Tumbleweed build up on LS of pipe.

USACE_CESPK_L017_2012_a_0030_2.jpg

GPS Latitude/Longitude	
Start	End
36.923413 ° -120.336650 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe across crown. Invert above crown elevation. Open on both sides.

USACE_CESPK_L017_2012_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.923458 ° -120.336567 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number[1]	0031
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe across crown. Invert above crown elevation. Open on both sides.

USACE_CESPK_L017_2012_a_0031_2.jpg

GPS Latitude/Longitude	
Start	End
36.923458 ° -120.336567 °	0.000000 ° 0.000000 °
Rating[3]: U	

LIS Issue Number[1]	0033
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Animal tracks on both slopes. Some tracks cut into slope up to 1 foot.

USACE_CESPK_L017_2012_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
36.952510 ° -120.348870 °	36.922740 ° -120.336240 °
Rating[3]: U	

LIS Issue Number[1]	0033
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Animal tracks on both slopes. Some tracks cut into slope up to 1 foot.

USACE_CESPK_L017_2012_a_0033_2.jpg

GPS Latitude/Longitude	
Start	End
36.952510 ° -120.348870 °	36.922740 ° -120.336240 °
Rating[3]: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
36.952340 ° -120.348870 °	36.938020 ° -120.341700 °
Rating³: U	

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0034_2.jpg

GPS Latitude/Longitude	
Start	End
36.952340 ° -120.348870 °	36.938020 ° -120.341700 °
Rating³: U	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil material against LS slope. In levee log.

USACE_CESPK_L017_2012_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
36.918320 ° -120.334590 °	36.922080 ° -120.335940 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil material against LS slope. In levee log.

USACE_CESPK_L017_2012_a_0035_2.jpg

GPS Latitude/Longitude	
Start	End
36.918320 ° -120.334590 °	36.922080 ° -120.335940 °
Rating³:	A

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
36.916475 ° -120.334033 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole on LS slope, at least 3 feet deep. Near bait station.

USACE_CESPK_L017_2012_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
36.909855 ° -120.331592 °	0.000000 ° 0.000000 °
Rating³:	M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent hole on LS slope, at least 3 feet deep. Near bait station.

USACE_CESPK_L017_2012_a_0037_2.jpg

GPS Latitude/Longitude	
Start	End
36.909855 ° -120.331592 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes on LS slope, at least 2 feet deep.

USACE_CESPK_L017_2012_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
36.908893 ° -120.331237 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several 8 to 10 inch diameter holes on both slopes at least 3-6 feet deep.

USACE_CESPK_L017_2012_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
36.908583 ° -120.331083 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several 8 to 10 inch diameter holes on both slopes at least 3-6 feet deep.

USACE_CESPK_L017_2012_a_0039_2.jpg

GPS Latitude/Longitude	
Start	End
36.908583 ° -120.331083 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several 8 to 10 inch diameter holes on both slopes at least 3-6 feet deep.

USACE_CESPK_L017_2012_a_0039_3.jpg

GPS Latitude/Longitude	
Start	End
36.908583 ° -120.331083 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several 8 to 10 inch diameter holes on both slopes at least 3-6 feet deep.

USACE_CESPK_L017_2012_a_0039_4.jpg

GPS Latitude/Longitude	
Start	End
36.908583 ° -120.331083 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Large rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
36.907415 ° -120.330695 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Large rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0040_2.jpg

GPS Latitude/Longitude	
Start	End
36.907415 ° -120.330695 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil berm on LS slope. Noted in levee log.

USACE_CESPK_L017_2012_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
36.909730 ° -120.331510 °	36.902640 ° -120.328950 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil berm on LS slope. Noted in levee log.

USACE_CESPK_L017_2012_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
36.909730 ° -120.331510 °	36.902640 ° -120.328950 °

Rating³: A

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power line crosses over crown. Poles in floodway.

USACE_CESPK_L017_2012_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
36.899887 ° -120.327565 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several large diameter rodent holes on LS slope.

USACE_CESPK_L017_2012_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
36.898285 ° -120.326795 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Minimally Acceptable; Remarks: Rodent holes in LS slope.

USACE_CESPK_L017_2012_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
36.896193 ° -120.325740 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil berm on LS slope. Noted in levee log.

USACE_CESPK_L017_2012_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
36.890240 ° -120.322810 °	36.892210 ° -120.323770 °

Rating³: A

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable; Remarks: Several large rodent holes in LS toe.

USACE_CESPK_L017_2012_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
36.879280 ° -120.318523 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number[1]	0048
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power line crosses over crown.

USACE_CESPK_L017_2012_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
36.872889 ° -120.317251 °	0.000000 ° 0.000000 °

Rating[3]: A

LIS Issue Number[1]	0049
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Headwalls on both sides. Pulley system on WS headwall is broken.

USACE_CESPK_L017_2012_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
36.872357 ° -120.317168 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0049
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Headwalls on both sides. Pulley system on WS headwall is broken.

USACE_CESPK_L017_2012_a_0049_2.jpg

GPS Latitude/Longitude	
Start	End
36.872357 ° -120.317168 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Minimally Acceptable; Remarks: Rutting on WS slope less than 6 inches deep.

USACE_CESPK_L017_2012_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
36.872541 ° -120.317301 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
36.850757 ° -120.314167 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0053_2.jpg

GPS Latitude/Longitude	
Start	End
36.850757 ° -120.314167 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Trailer on crown at turnout for sheepherder.

USACE_CESPK_L017_2012_a_0054_1.jpg

GPS Latitude/Longitude	
Start	End
36.842681 ° -120.312540 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Ramp on slopes. Low water crossing of floodway. Bridge across drainage canal on LS of levee. Permit app # 5128.

USACE_CESPK_L017_2012_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
36.836689 ° -120.305361 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Thick brush obscures visibility for inspection on both slopes.

USACE_CESPK_L017_2012_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
36.846020 ° -120.313880 °	36.837130 ° -120.306000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Thick brush obscures visibility for inspection on both slopes.

USACE_CESPK_L017_2012_a_0057_2.jpg

GPS Latitude/Longitude	
Start	End
36.846020 ° -120.313880 °	36.837130 ° -120.306000 °
Rating³: U	

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable; Remarks: Rodent activity on both slopes. Large hole at LS toe. 7 feet deep, 12 inches wide.

USACE_CESPK_L017_2012_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
36.827842 ° -120.297790 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable; Remarks: Rodent activity on both slopes. Large hole at LS toe. 7 feet deep, 12 inches wide.

USACE_CESPK_L017_2012_a_0058_2.jpg

GPS Latitude/Longitude	
Start	End
36.827842 ° -120.297790 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number[1]	0059
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Rutting on LS Slope. 7 inches deep.

USACE_CESPK_L017_2012_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
36.824425 ° -120.299063 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0060
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Rutting on WS slope. 10 inches deep.

USACE_CESPK_L017_2012_a_0060_1.jpg

GPS Latitude/Longitude	
Start	End
36.816423 ° -120.302332 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0060
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rated Item: 8. Depressions/ Rutting; Rating: Unacceptable Yellow; Remarks: Rutting on WS slope. 10 inches deep.

USACE_CESPK_L017_2012_a_0060_2.jpg

GPS Latitude/Longitude	
Start	End
36.816423 ° -120.302332 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes.

USACE_CESPK_L017_2012_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
36.811498 ° -120.304360 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Rated Item: 10. Animal Control; Rating: Unacceptable Red; Remarks: Rodent holes on both slopes.

GPS Latitude/Longitude	
Start	End
36.811498 ° -120.304360 °	0.000000 ° 0.000000 °
Rating³: U	

USACE_CESPK_L017_2012_a_0062_2.jpg

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Flap gate propped closed. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0063_1.jpg

GPS Latitude/Longitude	
Start	End
36.807488 ° -120.306290 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Pipe through levee. Flap gate on WS. Flap gate propped closed. Headwalls on both sides.

USACE_CESPK_L017_2012_a_0063_2.jpg

GPS Latitude/Longitude	
Start	End
36.807488 ° -120.306290 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0065
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Acceptable; Remarks: Rock placed on LS slope and toe.

USACE_CESPK_L017_2012_a_0065_1.jpg

GPS Latitude/Longitude	
Start	End
36.804828 ° -120.307308 °	0.000000 ° 0.000000 °

Rating³: A

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Slope Stability

Rated Item: 5. Slope Stability; Rating: Acceptable; Remarks: Rock placed on LS slope. Slope flattened for rock placement.

USACE_CESPK_L017_2012_a_0066_1.jpg

GPS Latitude/Longitude	
Start	End
36.800533 ° -120.306693 °	0.000000 ° 0.000000 °

Rating³: A

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Natural gas pipeline crosses under levee and channel, unknown depth.

USACE_CESPK_L017_2012_a_0067_1.jpg

GPS Latitude/Longitude	
Start	End
36.793310 ° -120.302123 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Power lines cross over levee perpendicular to crown.

USACE_CESPK_L017_2012_a_0068_1.jpg

GPS Latitude/Longitude	
Start	End
36.793150 ° -120.302035 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Gas pipeline crosses under levee and channel, unknown depth.

USACE_CESPK_L017_2012_a_0069_1.jpg

GPS Latitude/Longitude	
Start	End
36.792853 ° -120.301828 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe through levee. Flap gate on WS, stuck open. Headwalls on both sides. Headwall on WS spalling.

USACE_CESPK_L017_2012_a_0070_1.jpg

GPS Latitude/Longitude	
Start	End
36.789035 ° -120.300727 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Red; Remarks: Pipe through levee. Flap gate on WS, stuck open. Headwalls on both sides. Headwall on WS spalling.

USACE_CESPK_L017_2012_a_0070_2.jpg

GPS Latitude/Longitude	
Start	End
36.789035 ° -120.300727 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0071_1.jpg

GPS Latitude/Longitude	
Start	End
36.774870 ° -120.284120 °	36.824860 ° -120.298780 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

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Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0071_2.jpg

GPS Latitude/Longitude	
Start	End
36.774870 ° -120.284120 °	36.824860 ° -120.298780 °
Rating³: U	

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Rated Item: 1. Unwanted Vegetation Growth; Rating: Unacceptable Yellow; Remarks: Brush on both slopes obscures visibility for inspection.

USACE_CESPK_L017_2012_a_0071_3.jpg

GPS Latitude/Longitude	
Start	End
36.774870 ° -120.284120 °	36.824860 ° -120.298780 °
Rating³: U	

LIS Issue Number¹	0072
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Rated Item: 2. Shoaling (sediment deposition); Rating: Minimally Acceptable; Remarks: Sediment removal operations in channel.

USACE_CESPK_L017_2012_a_0072_1.jpg

GPS Latitude/Longitude	
Start	End
36.780249 ° -120.290541 °	0.000000 ° 0.000000 °
Rating³: M	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0074
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil berm along LS slope. Berm noted in O&M manual and levee log.

USACE_CESPK_L017_2012_a_0074_1.jpg

GPS Latitude/Longitude	
Start	End
36.774870 ° -120.284210 °	36.788630 ° -120.300070 °
Rating³:	A

LIS Issue Number¹	0074
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Spoil berm along LS slope. Berm noted in O&M manual and levee log.

USACE_CESPK_L017_2012_a_0074_2.jpg

GPS Latitude/Longitude	
Start	End
36.774870 ° -120.284210 °	36.788630 ° -120.300070 °
Rating³:	A

LIS Issue Number¹	0076
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Minimally Acceptable; Remarks: Railings of control structure damaged. Chowchilla canal bypass control structure.

USACE_CESPK_L017_2012_a_0076_1.jpg

GPS Latitude/Longitude	
Start	End
36.773937 ° -120.284583 °	0.000000 ° 0.000000 °
Rating³:	M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² Location BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0077
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Unacceptable Yellow; Remarks: Trash racks missing from Chowchilla Canal Bypass Control structure.

USACE_CESPK_L017_2012_a_0077_1.jpg

GPS Latitude/Longitude	
Start	End
36.774078 ° -120.284418 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Chowchilla Canal Bypass Control Structure.

USACE_CESPK_L017_2012_a_0078_1.jpg

GPS Latitude/Longitude	
Start	End
36.774058 ° -120.284498 °	0.000000 ° 0.000000 °
Rating³: A	

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Chowchilla Canal Bypass Control Structure.

USACE_CESPK_L017_2012_a_0078_2.jpg

GPS Latitude/Longitude	
Start	End
36.774058 ° -120.284498 °	0.000000 ° 0.000000 °
Rating³: A	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 17, Chowchilla Bypass right bank above Fresno River (L017)	Right	16.09	USACE	9/18/2012 9/18/2012	Ryan Larson

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Chowchilla Canal Bypass Control Structure.

USACE_CESPK_L017_2012_a_0078_3.jpg

GPS Latitude/Longitude	
Start	End
36.774058 ° -120.284498 °	0.000000 ° 0.000000 °
Rating³:	A

LIS Issue Number¹	0078
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Rated Item: 3. Encroachments; Rating: Acceptable; Remarks: Chowchilla Canal Bypass Control Structure.

USACE_CESPK_L017_2012_a_0078_4.jpg

GPS Latitude/Longitude	
Start	End
36.774058 ° -120.284498 °	0.000000 ° 0.000000 °
Rating³:	A

LIS Issue Number¹	0080
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Concrete Surfaces

Rated Item: 5. Concrete Surfaces; Rating: Acceptable; Remarks: Firebaugh Blvd. bridge appears to be in good condition.

USACE_CESPK_L017_2012_a_0080_1.jpg

GPS Latitude/Longitude	
Start	End
0.000000 ° 0.000000 °	0.000000 ° 0.000000 °
Rating³:	A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** BM: Berm, CR: Crown, LC: Levee Crown Only, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Sid

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps
of Engineers®

Flood Damage Reduction System
Inspection Report

Name of Segment/System: LSJLD - Unit 23, San Joaquin River right bank above Chowchilla Bypass/LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Paul Risher, Justin Hake Date of Inspection: 9/17/2012 - 9/19/2012

Inspection Report Prepared By: Justin Hake Date Report Prepared: 09/25/2012

Internal Technical Review (for Periodic Inspections) By: ____ Date of ITR: ____

Final Approval By: ____ Date Approved: ____

Type of Inspection:

- ☐ **Initial Eligibility Inspection**
- ☑ **Continuing Eligibility Inspection (Routine)**
- ☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

- ☐ **Acceptable**
- ☐ **Minimally Acceptable**
- ☑ **Unacceptable**

Contents of this Report:

- ☑ **Instructions**
- ☐ **Initial Eligibility Inspection**
- ☑ **General Items for All Flood Control Works**
- ☑ **Levee Embankments**
- ☐ **Concrete Floodwalls**
- ☐ **Sheet Pile and Concrete I-walls**
- ☐ **Interior Drainage System**
- ☐ **Pump Stations**
- ☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts to the certification for FEMA

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	**U**	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	**N/A**	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroach-ments	**U**	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	**N/A**	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	U	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	U	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	A	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	U	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	A	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	U	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**M**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	M	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	M	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroach-ments	U	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	N/A	**A**	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	N/A	**A**	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	N/A	**A**	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	N/A	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	N/A	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	N/A	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	N/A	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

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[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]	Photo [5]
	Start	End						Start	End		
1			Levee Embankments	Encroachments		A	Stream gauging structure on berm about 100 feet water ward from levee. Noted as FW #2 in O&M manual Part3, Sec. 3100. : NA	36.773870 ° -120.282952 °	0.000000 ° 0.000000 °	0001	Y
2			Levee Embankments	Encroachments		U	Pipe though levee noted in O&M manual with headwalls on both sides and a closed flapgate on WS. : Video inspect pipe through levee. Confirm permit status.	36.772685 ° -120.280627 °	0.000000 ° 0.000000 °	0002	Y
3			Levee Embankments	Animal Control		U	Multitude of burrows on both sides of levee at least 12 inches deep. : Repair holes and control rodents.	36.772665 ° -120.280583 °	0.000000 ° 0.000000 °	0003	Y
4			Levee Embankments	Animal Control		M	Two holes on WS up to 8 inches deep. 15 feet wide turn around on LS with holes on slope. : Repair holes and control rodents.	36.772968 ° -120.276438 °	0.000000 ° 0.000000 °	0004	Y
5			Levee Embankments	Encroachments		M	Gravel placed in berm on LS slope and WS slope. Possibly seepage repair site. : Determine cause for placement.	36.774735 ° -120.272747 °	0.000000 ° 0.000000 °	0005	Y
6			Levee Embankments	Slope Stability		M	Slope is over steepened on WS along a reach on inside corner of bend, 2:1. It should be 3:1. : Restore to as-built grade.	36.774450 ° -120.274530 °	36.774080 ° -120.271660 °	0006	Y
7			Levee Embankments	Encroachments		M	Gravel berm on LS, vegetated. Road on adjacent property is made of similar material. : Determine cause for placement.	36.773682 ° -120.270298 °	0.000000 ° 0.000000 °	0007	Y
8			Flood Damage Reduction Channels	Encroachments		U	Metal container box 30 feet from levee in channel. : Remove.	36.773197 ° -120.269290 °	0.000000 ° 0.000000 °	0008	Y
9			Flood Damage Reduction Channels	Encroachments		A	Monitoring well and pathway in channel. Noted in O&M manual and log. : NA	36.773153 ° -120.269213 °	0.000000 ° 0.000000 °	0009	Y
10			Levee Embankments	Animal Control		U	Holes on both sides of levee at least 3 feet deep. : Repair holes and control rodents.	36.773027 ° -120.268813 °	0.000000 ° 0.000000 °	0010	Y
11			Levee Embankments	Encroachments		M	Gravel placed in berm on LS approximately 300 feet long. Vegetated. : Determine cause for placement.	36.772683 ° -120.267248 °	0.000000 ° 0.000000 °	0011	Y
12			Levee Embankments	Unwanted Vegetation Growth		U	Mature elderberry tree greater than 2 inch diameter trunk. : NA	36.772978 ° -120.264663 °	0.000000 ° 0.000000 °	0012	Y
13			Levee Embankments	Depressions/ Rutting		M	Vehicle ruts on WS hinge, less than 6 inches deep. : Repair surface.	36.772635 ° -120.260477 °	0.000000 ° 0.000000 °	0013	Y
14			Levee Embankments	Encroachments		U	Monitoring well within 15 feet of WS toe. Flush with grade. Not in log. : Confirm permit status.	36.772172 ° -120.259748 °	0.000000 ° 0.000000 °	0014	Y
15			Levee Embankments	Encroachments		U	Pipe though levee noted in log. Headwalls on both sides. WS flapgate not-closed. Hydraulic connection to river impaired due to dense vegetation and sediment (channel not visible). : Video inspect pipe through levee. Ensure proper function of slide gate. Confirm permit status.	36.771395 ° -120.257883 °	0.000000 ° 0.000000 °	0015	Y
16			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Large mounds of sand in channel taller than levee. Used for ATVs : Ensure channel conveyance capacity.	36.770720 ° -120.256904 °	0.000000 ° 0.000000 °	0016	Y
17			Levee Embankments	Encroachments		M	Boat on WS slope. : Remove.	36.771670 ° -120.255723 °	0.000000 ° 0.000000 °	0017	Y
18			Levee Embankments	Erosion/ Bank Caving		U	Severe erosion more than 400 feet long. Cuts into levee prism more than 2 feet deep due to meander in channel. Nearly vertical slope about 20 feet tall. Concrete rubble on slope. : Repair site and protect from future erosion.	36.772110 ° -120.254050 °	36.773470 ° -120.253210 °	0018	Y

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US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

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Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

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Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
19			Levee Embankments	Animal Control		U	Several holes on LS at least 3 feet deep. : Repair holes and control rodents.	36.774647 ° -120.252728 °	0.000000 ° 0.000000 °	0019 Y
20			Levee Embankments	Animal Control		U	Several interconnected holes at least 2 feet deep on WS slope. Holes on LS slope also. : Repair holes and control rodents.	36.775647 ° -120.250275 °	0.000000 ° 0.000000 °	0020 Y
21			Levee Embankments	Unwanted Vegetation Growth		U	Mature elderberry within 15 feet of LS toe, larger than 2 inches in diameter. : NA	36.775115 ° -120.247628 °	0.000000 ° 0.000000 °	0021 Y
22			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Sand berms pushed up in channel taller than levee crest. May be used to direct flow. : Ensure channel conveyance capacity.	36.775123 ° -120.247647 °	0.000000 ° 0.000000 °	0022 Y
23			Levee Embankments	Animal Control		U	Several small shallow holes on both sides of levee. : Repair holes and control rodents.	36.772217 ° -120.245052 °	0.000000 ° 0.000000 °	0023 Y
24			Levee Embankments	Unwanted Vegetation Growth		U	Cluster of mature elderberries within 15 feet of LS toe. : NA	36.771562 ° -120.241092 °	0.000000 ° 0.000000 °	0024 Y
25			Levee Embankments	Animal Control		U	Holes on LS at least 2 feet deep. : Repair holes and control rodents.	36.771547 ° -120.239237 °	0.000000 ° 0.000000 °	0025 Y
26			Levee Embankments	Encroachments		U	Pipe through levee noted in log with headwalls on both sides and closed flap gate on WS. LS canal had thick vegetation. : Video inspect pipe through levee and ensure function of gate. Confirm permit status.	36.771528 ° -120.238492 °	0.000000 ° 0.000000 °	0026 Y
27			Levee Embankments	Unwanted Vegetation Growth		U	Cluster of mature elderberries within 15 feet of LS toe. : NA	36.774435 ° -120.234712 °	0.000000 ° 0.000000 °	0027 Y
28			Levee Embankments	Animal Control		U	Several small burrows on WS slope at least 12 inches deep. : Repair holes and control rodents.	36.775283 ° -120.234665 °	0.000000 ° 0.000000 °	0028 Y
29			Levee Embankments	Animal Control		U	Rodent borrows on both sides. Largest is 2 feet wide and 18 inches deep. : Repair holes and control rodents.	36.776240 ° -120.234628 °	0.000000 ° 0.000000 °	0029 Y
30			Levee Embankments	Unwanted Vegetation Growth		U	Mature elderberry on LS slope. : NA	36.776572 ° -120.234602 °	0.000000 ° 0.000000 °	0030 Y
31			Levee Embankments	Depressions/ Rutting		U	Tire rutting up to 8 inches deep, 200 feet long. : Repair rutting.	36.776843 ° -120.234637 °	0.000000 ° 0.000000 °	0031 Y
32			Levee Embankments	Erosion/ Bank Caving		U	Channel erosion cutting into levee foundation below toe. Concrete rubble revetment on nearly vertical bank about 20 feet tall. Due to channel meander. Visible on aerial. : Repair bank to design grade and protect from future erosion.	36.780380 ° -120.233970 °	36.781930 ° -120.233150 °	0032 Y
33			Levee Embankments	Unwanted Vegetation Growth		U	Mature elderberry within 15 feet of LS toe. : NA	36.784147 ° -120.229203 °	0.000000 ° 0.000000 °	0033 Y
34			Levee Embankments	Animal Control		U	Several small burrows on both sides of levee. : Repair holes and control rodents.	36.784262 ° -120.228005 °	0.000000 ° 0.000000 °	0034 Y
35			Levee Embankments	Animal Control		U	Several small holes on WS. Typical of area. : Repair holes and control rodents.	36.784147 ° -120.227190 °	0.000000 ° 0.000000 °	0035 Y
36			Flood Damage Reduction Channels	Vegetation and Obstructions		M	Short ring levee in channel, connected to main levee on WS. May impair high flows. Noted in log. : NA	36.784305 ° -120.223725 °	0.000000 ° 0.000000 °	0036 Y
37			Levee Embankments	Unwanted Vegetation Growth		U	Mature elderberry within 15 feet of LS toe. : NA	36.784538 ° -120.223372 °	0.000000 ° 0.000000 °	0037 Y

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Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No.[4]
	Start	End						Start	End	Photo[5]
38			Levee Embankments	Erosion/ Bank Caving		M	Channel erosion within 35 feet of toe. Close to levee foundation toe. Concrete rubble revetment on nearly vertical bank. More than 100' long. : Monitor for future erosion.	36.786712 ° -120.221537 °	0.000000 ° 0.000000 °	0038 Y
39			Levee Embankments	Encroachments		U	Pipe though levee noted in log with slide gate in riser on WS hinge. Headwalls on both sides. Open box culvert on WS. : Video inspect pipe through levee and ensure function of gate. Confirm permit status.	36.789535 ° -120.220373 °	0.000000 ° 0.000000 °	0039 Y
40			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Large pile of sand in channel. Appears to be used by ATVs. : Ensure channel conveyance capacity.	36.791360 ° -120.215002 °	0.000000 ° 0.000000 °	0040 Y
41			Levee Embankments	Encroachments		U	Pipe through levee noted in log. Headwalls on both sides. Flap gate on WS closed and blocked. No connection to canal on LS. : Video inspect pipe through levee and ensure function of gate. Confirm permit status. Remove if not needed.	36.792007 ° -120.206357 °	0.000000 ° 0.000000 °	0041 Y
42			Levee Embankments	Animal Control		U	Large network of holes 8 inches in diameter at least 3 feet deep. More than 2 cf of displaced material. : Control rodents and repair holes.	36.791878 ° -120.206218 °	0.000000 ° 0.000000 °	0042 Y
43			Levee Embankments	Erosion/ Bank Caving		M	Bank erosion 25 feet from WS toe. Bank is revetted with concrete rubble and 21 feet tall. About 200-300 feet long. : Monitor for future erosion.	36.786482 ° -120.200885 °	0.000000 ° 0.000000 °	0043 Y
44			Levee Embankments	Animal Control		M	Extensive network of large diameter burrows on WS berm not in prism. : Monitor and control rodents.	36.784493 ° -120.200978 °	0.000000 ° 0.000000 °	0044 Y
45			Levee Embankments	Animal Control		U	Network of 4-6 inch diameter burrows on both sides of levee. : Repair holes and control rodents.	36.783110 ° -120.200567 °	0.000000 ° 0.000000 °	0045 Y
46			Levee Embankments	Animal Control		U	Rodent burrows at least 3 feet deep with large pile of sand. : Repair holes and control rodents.	36.781943 ° -120.199738 °	0.000000 ° 0.000000 °	0046 Y
47			Levee Embankments	Encroachments		U	Monitoring well at LS toe not in log. : Confirm permit status.	36.781940 ° -120.199730 °	0.000000 ° 0.000000 °	0047 Y
48			Levee Embankments	Riprap Revetments & Bank Protection		M	Concrete rubble and boulder revetment on bank, 1:1 slope. Sporadic vegetation. Possible undercutting at toe. : Monitor for erosion and displacement.	36.781960 ° -120.200020 °	36.780540 ° -120.197170 °	0048 Y
49			Levee Embankments	Erosion/ Bank Caving		U	Bank erosion within 20 feet of WS toe. Revetted with concrete rubble. 200 feet long. Cutting into levee foundation. : Repair bank and protect from future erosion.	36.780688 ° -120.197325 °	0.000000 ° 0.000000 °	0049 Y
50			Levee Embankments	Encroachments		U	Pipe though levee noted in log. Headwalls on both sides. Flap gate on WS blocked shut. : Video inspect pipe through levee. Confirm permit status.	36.778907 ° -120.192598 °	0.000000 ° 0.000000 °	0050 Y
51			Flood Damage Reduction Channels	Shoaling (sediment deposition)		M	Large berms and piles of sand in channel several feet taller than levee. : Ensure channel conveyance capacity.	36.778020 ° -120.192880 °	36.779700 ° -120.187480 °	0051 Y
52			Levee Embankments	Erosion/ Bank Caving		M	Bank erosion within 20 feet of levee toe. Revetted with concrete rubble. About 300' long. : Monitor for future erosion.	36.786013 ° -120.182803 °	0.000000 ° 0.000000 °	0052 Y
53			Levee Embankments	Erosion/ Bank Caving		U	Bank erosion within 15 feet of WS toe. Revetted with concrete rubble, nearly vertical. 125 feet long. Cutting into levee foundation. : Repair bank and protect from future erosion.	36.787725 ° -120.182518 °	0.000000 ° 0.000000 °	0053 Y
54			Levee Embankments	Animal Control		U	Extensive network of large diameter holes on both sides of levee adjacent to nut orchard. : Repair holes and control rodents.	36.789862 ° -120.182220 °	0.000000 ° 0.000000 °	0054 Y

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Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
55			Levee Embankments	Encroachments		U	Pipe through levee with headwall on both sides. Flapgate propped shut. : Video inspect pipe through levee. Confirm permit status.	36.792517 ° -120.181207 °	0.000000 ° 0.000000 °	0055 Y
56			Levee Embankments	Animal Control		U	Rodents holes on both sides of levee and across crown. Tunnel collapsed in road leaving depression. : Repair holes and control rodents.	36.792595 ° -120.181103 °	0.000000 ° 0.000000 °	0056 Y
57			Levee Embankments	Encroachments		A	Utility line more than 20 feet over levee. Poles in channel. : Confirm permit status.	36.793260 ° -120.180012 °	0.000000 ° 0.000000 °	0057 Y
58			Flood Damage Reduction Channels	Encroachments		M	Large sediment pile in channel taller than levee. : Ensure channel conveyance capacity.	36.793558 ° -120.179330 °	0.000000 ° 0.000000 °	0058 Y
59			Levee Embankments	Animal Control		U	Extensive network of burrows on both sides of levee at least 5 feet deep, more than 4 cf of displaced material. : Rebuild levee and control rodents.	36.793628 ° -120.179220 °	0.000000 ° 0.000000 °	0059 Y
60			Levee Embankments	Encroachments		U	Pipe through levee, noted in log. Headwalls on both sides and flapgate propped closed. : Video inspect pipe through levee. Confirm permit status.	36.794150 ° -120.178110 °	0.000000 ° 0.000000 °	0062 Y
61			Levee Embankments	Animal Control		U	Extensive network of large diameter holes on both sides and adjacent land. : Repair holes and control rodents.	36.800373 ° -120.175052 °	0.000000 ° 0.000000 °	0063 Y
62			Levee Embankments	Erosion/ Bank Caving		U	Bank erosion within 5 feet of levee toe (levee is 2 feet tall) 500 feet long. Concrete rubble revetment not in log. Slope stability is compromised. Danger to patrol vehicles. : Repair slope and protect from future erosion.	36.803280 ° -120.172940 °	36.801410 ° -120.174240 °	0064 Y
63			Levee Embankments	Slope Stability		U	Cracking near crown greater than 1 inch wide. 60 feet long. Vertical displacement along crack. Due to slope movement : Repair slope.	36.803055 ° -120.173233 °	0.000000 ° 0.000000 °	0065 Y
64			Levee Embankments	Encroachments		U	Pipe through levee. Headwalls on both sides and two slide gates on WS hinge. Noted in log as Gravelly Ford irrigation canal structure. : Video inspect pipe through levee and ensure function of gates. Confirm permit status.	36.807712 ° -120.168828 °	0.000000 ° 0.000000 °	0066 Y
65			Levee Embankments	Unwanted Vegetation Growth		U	Vegetation up to 4 feet tall on both slopes inhibits inspection. Appears to have been mowed within last year. : Remove unwanted vegetation.	36.777690 ° -120.284410 °	36.804440 ° -120.171900 °	0067 Y
66			Levee Embankments	Encroachments		U	Utility poles on both slopes with line crossing about 15 feet over roadway. : Remove poles or confirm permit status.	36.808067 ° -120.168863 °	0.000000 ° 0.000000 °	0068 Y
67			Levee Embankments	Unwanted Vegetation Growth		U	No maintenance of vegetation on slopes in several seasons. Several small trees and dense brush on both sides. : Maintain flood control right of way.	36.804350 ° -120.168730 °	36.814260 ° -120.168850 °	0069 Y
68			Levee Embankments	Encroachments		U	Gas line crossing levee. Unknown depth, not in levee log. : Confirm permit status. Verify pipe condition.	36.808532 ° -120.168865 °	0.000000 ° 0.000000 °	0070 Y
69			Levee Embankments	Encroachments		U	Utility crossing about 20 feet over road. : Determine permit status.	36.809712 ° -120.168843 °	0.000000 ° 0.000000 °	0071 Y
70			Levee Embankments	Encroachments		U	Utility line about 20 feet over levee. : Confirm permit status.	36.811727 ° -120.168862 °	0.000000 ° 0.000000 °	0072 Y
71			Levee Embankments	Encroachments		U	Line of utility poles within easement on WS. : Confirm permit status.	36.808090 ° -120.168620 °	36.814540 ° -120.168660 °	0073 Y

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³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L023_2012_a_####.

⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

Index¹	Levee Mile		Category	Item	Location²	Rating³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
72			Levee Embankments	Animal Control		🟥 U	Animal control program is not effective throughout entire levee. : Repair holes and control rodents. Establish an effective animal control program.	0.000000 ° 0.000000 °	0.000000 ° 0.000000 °	0074

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.
² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)
³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable
⁴ USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L023_2012_a_####.
⁵ Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number[1]	0001
Start Levee Mile	
End Levee Mile	
Location[2]	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Remarks: Stream gauging structure on berm about 100 feet water ward from levee. Noted as FW #2 in O&M manual Part3, Sec. 3100.

USACE_CESPK_L023_2012_a_0001_1.jpg

GPS Latitude/Longitude	
Start	End
36.773870 ° -120.282952 °	0.000000 ° 0.000000 °

Rating[3]: A

LIS Issue Number[1]	0002
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in O&M manual with headwalls on both sides and a closed flapgate on WS.

USACE_CESPK_L023_2012_a_0002_1.jpg

GPS Latitude/Longitude	
Start	End
36.772685 ° -120.280627 °	0.000000 ° 0.000000 °

Rating[3]: U

LIS Issue Number[1]	0002
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in O&M manual with headwalls on both sides and a closed flapgate on WS.

USACE_CESPK_L023_2012_a_0002_2.jpg

GPS Latitude/Longitude	
Start	End
36.772685 ° -120.280627 °	0.000000 ° 0.000000 °

Rating[3]: U

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Multitude of burrows on both sides of levee at least 12 inches deep.

USACE_CESPK_L023_2012_a_0003_1.jpg

GPS Latitude/Longitude	
Start	End
36.772665 ° -120.280583 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Multitude of burrows on both sides of levee at least 12 inches deep.

USACE_CESPK_L023_2012_a_0003_2.jpg

GPS Latitude/Longitude	
Start	End
36.772665 ° -120.280583 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Two holes on WS up to 8 inches deep. 15 feet wide turn around on LS with holes on slope.

USACE_CESPK_L023_2012_a_0004_1.jpg

GPS Latitude/Longitude	
Start	End
36.772968 ° -120.276438 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Gravel placed in berm on LS slope and WS slope. Possibly seepage repair site.

USACE_CESPK_L023_2012_a_0005_1.jpg

GPS Latitude/Longitude	
Start	End
36.774735 ° -120.272747 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0005
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Gravel placed in berm on LS slope and WS slope. Possibly seepage repair site.

USACE_CESPK_L023_2012_a_0005_2.jpg

GPS Latitude/Longitude	
Start	End
36.774735 ° -120.272747 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0006
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Slope is over steepened on WS along a reach on inside corner of bend, 2:1. It should be 3:1.

USACE_CESPK_L023_2012_a_0006_1.jpg

GPS Latitude/Longitude	
Start	End
36.774450 ° -120.274530 °	36.774080 ° -120.271660 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Gravel berm on LS, vegetated. Road on adjacent property is made of similar material.

USACE_CESPK_L023_2012_a_0007_1.jpg

GPS Latitude/Longitude	
Start	End
36.773682 ° -120.270298 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0008
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Metal container box 30 feet from levee in channel.

USACE_CESPK_L023_2012_a_0008_1.jpg

GPS Latitude/Longitude	
Start	End
36.773197 ° -120.269290 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Monitoring well and pathway in channel. Noted in O&M manual and log.

USACE_CESPK_L023_2012_a_0009_1.jpg

GPS Latitude/Longitude	
Start	End
36.773153 ° -120.269213 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0010
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Holes on both sides of levee at least 3 feet deep.

USACE_CESPK_L023_2012_a_0010_1.jpg

GPS Latitude/Longitude	
Start	End
36.773027 ° -120.268813 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Gravel placed in berm on LS approximately 300 feet long. Vegetated.

USACE_CESPK_L023_2012_a_0011_1.jpg

GPS Latitude/Longitude	
Start	End
36.772683 ° -120.267248 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature elderberry tree greater than 2 inch diameter trunk.

USACE_CESPK_L023_2012_a_0012_1.jpg

GPS Latitude/Longitude	
Start	End
36.772978 ° -120.264663 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Vehicle ruts on WS hinge, less than 6 inches deep.

USACE_CESPK_L023_2012_a_0013_1.jpg

GPS Latitude/Longitude	
Start	End
36.772635 ° -120.260477 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0014
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Monitoring well within 15 feet of WS toe. Flush with grade. Not in log.

USACE_CESPK_L023_2012_a_0014_1.jpg

GPS Latitude/Longitude	
Start	End
36.772172 ° -120.259748 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in log. Headwalls on both sides. WS flapgate not-closed. Hydraulic connection to river impaired due to dense vegetation and sediment (channel not visible).

USACE_CESPK_L023_2012_a_0015_1.jpg

GPS Latitude/Longitude	
Start	End
36.771395 ° -120.257883 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in log. Headwalls on both sides. WS flapgate not-closed. Hydraulic connection to river impaired due to dense vegetation and sediment (channel not visible).

USACE_CESPK_L023_2012_a_0015_2.jpg

GPS Latitude/Longitude	
Start	End
36.771395 ° -120.257883 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Large mounds of sand in channel taller than levee. Used for ATVs

USACE_CESPK_L023_2012_a_0016_1.jpg

GPS Latitude/Longitude	
Start	End
36.770720 ° -120.256904 °	0.000000 ° 0.000000 °
Rating³: M	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Boat on WS slope.

USACE_CESPK_L023_2012_a_0017_1.jpg

GPS Latitude/Longitude	
Start	End
36.771670 ° -120.255723 °	0.000000 ° 0.000000 °
Rating³: M	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Severe erosion more than 400 feet long. Cuts into levee prism more than 2 feet deep due to meander in channel. Nearly vertical slope about 20 feet tall. Concrete rubble on slope.

USACE_CESPK_L023_2012_a_0018_1.jpg

GPS Latitude/Longitude	
Start	End
36.772110 ° -120.254050 °	36.773470 ° -120.253210 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Severe erosion more than 400 feet long. Cuts into levee prism more than 2 feet deep due to meander in channel. Nearly vertical slope about 20 feet tall. Concrete rubble on slope.

USACE_CESPK_L023_2012_a_0018_2.jpg

GPS Latitude/Longitude	
Start	End
36.772110 ° -120.254050 °	36.773470 ° -120.253210 °
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Severe erosion more than 400 feet long. Cuts into levee prism more than 2 feet deep due to meander in channel. Nearly vertical slope about 20 feet tall. Concrete rubble on slope.

USACE_CESPK_L023_2012_a_0018_3.jpg

GPS Latitude/Longitude	
Start	End
36.772110 ° -120.254050 °	36.773470 ° -120.253210 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving
Remarks: Severe erosion more than 400 feet long. Cuts into levee prism more than 2 feet deep due to meander in channel. Nearly vertical slope about 20 feet tall. Concrete rubble on slope.	

USACE_CESPK_L023_2012_a_0018_4.jpg

GPS Latitude/Longitude	
Start	End
36.772110 ° -120.254050 °	36.773470 ° -120.253210 °
Rating³:	U

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control
Remarks: Several holes on LS at least 3 feet deep.	

USACE_CESPK_L023_2012_a_0019_1.jpg

GPS Latitude/Longitude	
Start	End
36.774647 ° -120.252728 °	0.000000 ° 0.000000 °
Rating³:	U

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Remarks: Several interconnected holes at least 2 feet deep on WS slope. Holes on LS slope also.	

USACE_CESPK_L023_2012_a_0020_1.jpg

GPS Latitude/Longitude	
Start	End
36.775647 ° -120.250275 °	0.000000 ° 0.000000 °
Rating³:	U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Remarks: Several interconnected holes at least 2 feet deep on WS slope. Holes on LS slope also.	

USACE_CESPK_L023_2012_a_0020_2.jpg

GPS Latitude/Longitude	
Start	End
36.775647 ° -120.250275 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control
Remarks: Several interconnected holes at least 2 feet deep on WS slope. Holes on LS slope also.	

USACE_CESPK_L023_2012_a_0020_3.jpg

GPS Latitude/Longitude	
Start	End
36.775647 ° -120.250275 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Remarks: Mature elderberry within 15 feet of LS toe, larger than 2 inches in diameter.	

USACE_CESPK_L023_2012_a_0021_1.jpg

GPS Latitude/Longitude	
Start	End
36.775115 ° -120.247628 °	0.000000 ° 0.000000 °
Rating³: U	

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Sand berms pushed up in channel taller than levee crest. May be used to direct flow.

USACE_CESPK_L023_2012_a_0022_1.jpg

GPS Latitude/Longitude	
Start	End
36.775123 ° -120.247647 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several small shallow holes on both sides of levee.

USACE_CESPK_L023_2012_a_0023_1.jpg

GPS Latitude/Longitude	
Start	End
36.772217 ° -120.245052 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Cluster of mature elderberries within 15 feet of LS toe.

USACE_CESPK_L023_2012_a_0024_1.jpg

GPS Latitude/Longitude	
Start	End
36.771562 ° -120.241092 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Holes on LS at least 2 feet deep.

USACE_CESPK_L023_2012_a_0025_1.jpg

GPS Latitude/Longitude	
Start	End
36.771547 ° -120.239237 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee noted in log with headwalls on both sides and closed flap gate on WS. LS canal had thick vegetation.

USACE_CESPK_L023_2012_a_0026_1.jpg

GPS Latitude/Longitude	
Start	End
36.771528 ° -120.238492 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee noted in log with headwalls on both sides and closed flap gate on WS. LS canal had thick vegetation.

USACE_CESPK_L023_2012_a_0026_2.jpg

GPS Latitude/Longitude	
Start	End
36.771528 ° -120.238492 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Cluster of mature elderberries within 15 feet of LS toe.

USACE_CESPK_L023_2012_a_0027_1.jpg

GPS Latitude/Longitude	
Start	End
36.774435 ° -120.234712 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several small burrows on WS slope at least 12 inches deep.

USACE_CESPK_L023_2012_a_0028_1.jpg

GPS Latitude/Longitude	
Start	End
36.775283 ° -120.234665 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent borrows on both sides. Largest is 2 feet wide and 18 inches deep.

USACE_CESPK_L023_2012_a_0029_1.jpg

GPS Latitude/Longitude	
Start	End
36.776240 ° -120.234628 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature elderberry on LS slope.

USACE_CESPK_L023_2012_a_0030_1.jpg

GPS Latitude/Longitude	
Start	End
36.776572 ° -120.234602 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Remarks: Tire rutting up to 8 inches deep, 200 feet long.

USACE_CESPK_L023_2012_a_0031_1.jpg

GPS Latitude/Longitude	
Start	End
36.776843 ° -120.234637 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Channel erosion cutting into levee foundation below toe. Concrete rubble revetment on nearly vertical bank about 20 feet tall. Due to channel meander. Visible on aerial.

USACE_CESPK_L023_2012_a_0032_1.jpg

GPS Latitude/Longitude	
Start	End
36.780380 ° -120.233970 °	36.781930 ° -120.233150 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0032
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Channel erosion cutting into levee foundation below toe. Concrete rubble revetment on nearly vertical bank about 20 feet tall. Due to channel meander. Visible on aerial.

USACE_CESPK_L023_2012_a_0032_2.jpg

GPS Latitude/Longitude	
Start	End
36.780380 ° -120.233970 °	36.781930 ° -120.233150 °

Rating³: U

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature elderberry within 15 feet of LS toe.

USACE_CESPK_L023_2012_a_0033_1.jpg

GPS Latitude/Longitude	
Start	End
36.784147 ° -120.229203 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Several small burrows on both sides of levee.

USACE_CESPK_L023_2012_a_0034_1.jpg

GPS Latitude/Longitude	
Start	End
36.784262 ° -120.228005 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Several small holes on WS. Typical of area.

USACE_CESPK_L023_2012_a_0035_1.jpg

GPS Latitude/Longitude	
Start	End
36.784147 ° -120.227190 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Vegetation and Obstructions

Remarks: Short ring levee in channel, connected to main levee on WS. May impair high flows. Noted in log.

USACE_CESPK_L023_2012_a_0036_1.jpg

GPS Latitude/Longitude	
Start	End
36.784305 ° -120.223725 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Mature elderberry within 15 feet of LS toe.

USACE_CESPK_L023_2012_a_0037_1.jpg

GPS Latitude/Longitude	
Start	End
36.784538 ° -120.223372 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Channel erosion within 35 feet of toe. Close to levee foundation toe. Concrete rubble revetment on nearly vertical bank. More than 100' long.

USACE_CESPK_L023_2012_a_0038_1.jpg

GPS Latitude/Longitude	
Start	End
36.786712 ° -120.221537 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in log with slide gate in riser on WS hinge. Headwalls on both sides. Open box culvert on WS.

USACE_CESPK_L023_2012_a_0039_1.jpg

GPS Latitude/Longitude	
Start	End
36.789535 ° -120.220373 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Large pile of sand in channel. Appears to be used by ATVs.

USACE_CESPK_L023_2012_a_0040_1.jpg

GPS Latitude/Longitude	
Start	End
36.791360 ° -120.215002 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee noted in log. Headwalls on both sides. Flap gate on WS closed and blocked. No connection to canal on LS.

USACE_CESPK_L023_2012_a_0041_1.jpg

GPS Latitude/Longitude	
Start	End
36.792007 ° -120.206357 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee noted in log. Headwalls on both sides. Flap gate on WS closed and blocked. No connection to canal on LS.

USACE_CESPK_L023_2012_a_0041_2.jpg

GPS Latitude/Longitude	
Start	End
36.792007 ° -120.206357 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Large network of holes 8 inches in diameter at least 3 feet deep. More than 2 cf of displaced material.

USACE_CESPK_L023_2012_a_0042_1.jpg

GPS Latitude/Longitude	
Start	End
36.791878 ° -120.206218 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Large network of holes 8 inches in diameter at least 3 feet deep. More than 2 cf of displaced material.

USACE_CESPK_L023_2012_a_0042_2.jpg

GPS Latitude/Longitude	
Start	End
36.791878 ° -120.206218 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion 25 feet from WS toe. Bank is revetted with concrete rubble and 21 feet tall. About 200-300 feet long.

USACE_CESPK_L023_2012_a_0043_1.jpg

GPS Latitude/Longitude	
Start	End
36.786482 ° -120.200885 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of large diameter burrows on WS berm not in prism.

USACE_CESPK_L023_2012_a_0044_1.jpg

GPS Latitude/Longitude	
Start	End
36.784493 ° -120.200978 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0044
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of large diameter burrows on WS berm not in prism.

USACE_CESPK_L023_2012_a_0044_2.jpg

GPS Latitude/Longitude	
Start	End
36.784493 °	0.000000 °
-120.200978 °	0.000000 °

Rating³: M

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Network of 4-6 inch diameter burrows on both sides of levee.

USACE_CESPK_L023_2012_a_0045_1.jpg

GPS Latitude/Longitude	
Start	End
36.783110 °	0.000000 °
-120.200567 °	0.000000 °

Rating³: U

LIS Issue Number¹	0045
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Network of 4-6 inch diameter burrows on both sides of levee.

USACE_CESPK_L023_2012_a_0045_2.jpg

GPS Latitude/Longitude	
Start	End
36.783110 °	0.000000 °
-120.200567 °	0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0046
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Animal Control

Remarks: Rodent burrows at least 3 feet deep with large pile of sand.

USACE_CESPK_L023_2012_a_0046_1.jpg

GPS Latitude/Longitude	
Start	End
36.781943 ° -120.199738 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0047
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Monitoring well at LS toe not in log.

USACE_CESPK_L023_2012_a_0047_1.jpg

GPS Latitude/Longitude	
Start	End
36.781940 ° -120.199730 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0048
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Riprap Revetments & Bank Protection

Remarks: Concrete rubble and boulder revetment on bank, 1:1 slope. Sporadic vegetation. Possible undercutting at toe.

USACE_CESPK_L023_2012_a_0048_1.jpg

GPS Latitude/Longitude	
Start	End
36.781960 ° -120.200020 °	36.780540 ° -120.197170 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0049
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion within 20 feet of WS toe. Revetted with concrete rubble. 200 feet long. Cutting into levee foundation.

USACE_CESPK_L023_2012_a_0049_1.jpg

GPS Latitude/Longitude	
Start	End
36.780688 ° -120.197325 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in log. Headwalls on both sides. Flap gate on WS blocked shut.

USACE_CESPK_L023_2012_a_0050_1.jpg

GPS Latitude/Longitude	
Start	End
36.778907 ° -120.192598 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0050
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe though levee noted in log. Headwalls on both sides. Flap gate on WS blocked shut.

USACE_CESPK_L023_2012_a_0050_2.jpg

GPS Latitude/Longitude	
Start	End
36.778907 ° -120.192598 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Large berms and piles of sand in channel several feet taller than levee.

USACE_CESPK_L023_2012_a_0051_1.jpg

GPS Latitude/Longitude	
Start	End
36.778020 ° -120.192880 °	36.779700 ° -120.187480 °

Rating³: M

LIS Issue Number¹	0051
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Shoaling (sediment deposition)

Remarks: Large berms and piles of sand in channel several feet taller than levee.

USACE_CESPK_L023_2012_a_0051_2.jpg

GPS Latitude/Longitude	
Start	End
36.778020 ° -120.192880 °	36.779700 ° -120.187480 °

Rating³: M

LIS Issue Number¹	0052
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion within 20 feet of levee toe. Revetted with concrete rubble. About 300' long.

USACE_CESPK_L023_2012_a_0052_1.jpg

GPS Latitude/Longitude	
Start	End
36.786013 ° -120.182803 °	0.000000 ° 0.000000 °

Rating³: M

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0053
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion within 15 feet of WS toe. Revetted with concrete rubble, nearly vertical. 125 feet long. Cutting into levee foundation.

USACE_CESPK_L023_2012_a_0053_1.jpg

GPS Latitude/Longitude	
Start	End
36.787725 ° -120.182518 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0054
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of large diameter holes on both sides of levee adjacent to nut orchard.

USACE_CESPK_L023_2012_a_0054_1.jpg

GPS Latitude/Longitude	
Start	End
36.789862 ° -120.182220 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee with headwall on both sides. Flapgate propped shut.

USACE_CESPK_L023_2012_a_0055_1.jpg

GPS Latitude/Longitude	
Start	End
36.792517 ° -120.181207 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0055
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee with headwall on both sides. Flapgate propped shut.

USACE_CESPK_L023_2012_a_0055_2.jpg

GPS Latitude/Longitude	
Start	End
36.792517 ° -120.181207 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0056
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Rodents holes on both sides of levee and across crown. Tunnel collapsed in road leaving depression.

USACE_CESPK_L023_2012_a_0056_1.jpg

GPS Latitude/Longitude	
Start	End
36.792595 ° -120.181103 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0057
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Utility line more than 20 feet over levee. Poles in channel.

USACE_CESPK_L023_2012_a_0057_1.jpg

GPS Latitude/Longitude	
Start	End
36.793260 ° -120.180012 °	0.000000 ° 0.000000 °

Rating³: A

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0058
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Flood Damage Reduction Channels
Item	Encroachments

Remarks: Large sediment pile in channel taller than levee.

USACE_CESPK_L023_2012_a_0058_1.jpg

GPS Latitude/Longitude	
Start	End
36.793558 ° -120.179330 °	0.000000 ° 0.000000 °

Rating³: M

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of burrows on both sides of levee at least 5 feet deep, more than 4 cf of displaced material.

USACE_CESPK_L023_2012_a_0059_1.jpg

GPS Latitude/Longitude	
Start	End
36.793628 ° -120.179220 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of burrows on both sides of levee at least 5 feet deep, more than 4 cf of displaced material.

USACE_CESPK_L023_2012_a_0059_2.jpg

GPS Latitude/Longitude	
Start	End
36.793628 ° -120.179220 °	0.000000 ° 0.000000 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of burrows on both sides of levee at least 5 feet deep, more than 4 cf of displaced material.

USACE_CESPK_L023_2012_a_0059_3.jpg

GPS Latitude/Longitude	
Start	End
36.793628 ° -120.179220 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0059
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of burrows on both sides of levee at least 5 feet deep, more than 4 cf of displaced material.

USACE_CESPK_L023_2012_a_0059_4.jpg

GPS Latitude/Longitude	
Start	End
36.793628 ° -120.179220 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee, noted in log. Headwalls on both sides and flapgate propped closed.

USACE_CESPK_L023_2012_a_0062_1.jpg

GPS Latitude/Longitude	
Start	End
36.794150 ° -120.178110 °	0.000000 ° 0.000000 °

Rating³: U

¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0062
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee, noted in log. Headwalls on both sides and flapgate propped closed.

USACE_CESPK_L023_2012_a_0062_2.jpg

GPS Latitude/Longitude	
Start	End
36.794150 ° -120.178110 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of large diameter holes on both sides and adjacent land.

USACE_CESPK_L023_2012_a_0063_1.jpg

GPS Latitude/Longitude	
Start	End
36.800373 ° -120.175052 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0063
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Animal Control

Remarks: Extensive network of large diameter holes on both sides and adjacent land.

USACE_CESPK_L023_2012_a_0063_2.jpg

GPS Latitude/Longitude	
Start	End
36.800373 ° -120.175052 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0064
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion within 5 feet of levee toe (levee is 2 feet tall) 500 feet long. Concrete rubble revetment not in log. Slope stability is compromised. Danger to patrol vehicles.

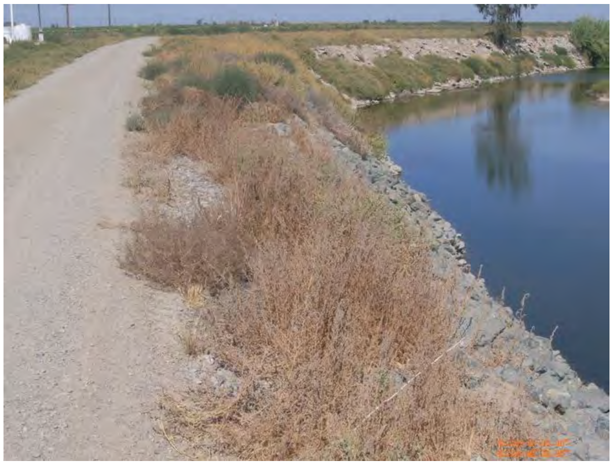
USACE_CESPK_L023_2012_a_0064_1.jpg

GPS Latitude/Longitude	
Start	End
36.803280 ° -120.172940 °	36.801410 ° -120.174240 °
Rating³: U	

LIS Issue Number¹	0064
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Remarks: Bank erosion within 5 feet of levee toe (levee is 2 feet tall) 500 feet long. Concrete rubble revetment not in log. Slope stability is compromised. Danger to patrol vehicles.

USACE_CESPK_L023_2012_a_0064_2.jpg



GPS Latitude/Longitude	
Start	End
36.803280 ° -120.172940 °	36.801410 ° -120.174240 °
Rating³: U	

LIS Issue Number¹	0065
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Slope Stability

Remarks: Cracking near crown greater than 1 inch wide. 60 feet long. Vertical displacement along crack. Due to slope movement

USACE_CESPK_L023_2012_a_0065_1.jpg

GPS Latitude/Longitude	
Start	End
36.803055 ° -120.173233 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Headwalls on both sides and two slide gates on WS hinge. Noted in log as Gravelly Ford irrigation canal structure.

USACE_CESPK_L023_2012_a_0066_1.jpg

GPS Latitude/Longitude	
Start	End
36.807712 ° -120.168828 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0066
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Pipe through levee. Headwalls on both sides and two slide gates on WS hinge. Noted in log as Gravelly Ford irrigation canal structure.

USACE_CESPK_L023_2012_a_0066_2.jpg

GPS Latitude/Longitude	
Start	End
36.807712 ° -120.168828 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation up to 4 feet tall on both slopes inhibits inspection. Appears to have been mowed within last year.

USACE_CESPK_L023_2012_a_0067_1.jpg

GPS Latitude/Longitude	
Start	End
36.777690 ° -120.284410 °	36.804440 ° -120.171900 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation up to 4 feet tall on both slopes inhibits inspection. Appears to have been mowed within last year.

USACE_CESPK_L023_2012_a_0067_2.jpg

GPS Latitude/Longitude	
Start	End
36.777690 ° -120.284410 °	36.804440 ° -120.171900 °
Rating³: U	

LIS Issue Number¹	0067
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: Vegetation up to 4 feet tall on both slopes inhibits inspection. Appears to have been mowed within last year.

USACE_CESPK_L023_2012_a_0067_3.jpg

GPS Latitude/Longitude	
Start	End
36.777690 ° -120.284410 °	36.804440 ° -120.171900 °
Rating³: U	

LIS Issue Number¹	0068
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Utility poles on both slopes with line crossing about 15 feet over roadway.

USACE_CESPK_L023_2012_a_0068_1.jpg

GPS Latitude/Longitude	
Start	End
36.808067 ° -120.168863 °	0.000000 ° 0.000000 °
Rating³: U	

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0069
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Remarks: No maintenance of vegetation on slopes in several seasons. Several small trees and dense brush on both sides.

USACE_CESPK_L023_2012_a_0069_1.jpg

GPS Latitude/Longitude	
Start	End
36.804350 ° -120.168730 °	36.814260 ° -120.168850 °
Rating³: U	

LIS Issue Number¹	0070
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Gas line crossing levee. Unknown depth, not in levee log.

USACE_CESPK_L023_2012_a_0070_1.jpg

GPS Latitude/Longitude	
Start	End
36.808532 ° -120.168865 °	0.000000 ° 0.000000 °
Rating³: U	

LIS Issue Number¹	0071
Start Levee Mile	
End Levee Mile	
Location²	Levee Crown Only
Category	Levee Embankments
Item	Encroachments

Remarks: Utility crossing about 20 feet over road.

USACE_CESPK_L023_2012_a_0071_1.jpg

GPS Latitude/Longitude	
Start	End
36.809712 ° -120.168843 °	0.000000 ° 0.000000 °
Rating³: U	

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection of LSJLD-Units 17, 23 - Fresno R, Chowchilla Bypass Levee System

Levee Inspection Report Photos - 2012

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE P.O.C
Lower San Joaquin LD - Unit 23, San Joaquin River right bank above Chowchilla Bypass (L023)	Right	10.24	USACE	9/19/2012 9/19/2012	Ryan Larson

LIS Issue Number¹	0072
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Remarks: Utility line about 20 feet over levee.

USACE_CESPK_L023_2012_a_0072_1.jpg

GPS Latitude/Longitude	
Start	End
36.811727 ° -120.168862 °	0.000000 ° 0.000000 °

Rating³: U

LIS Issue Number¹	0073
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Remarks: Line of utility poles within easement on WS.

USACE_CESPK_L023_2012_a_0073_1.jpg

GPS Latitude/Longitude	
Start	End
36.808090 ° -120.168620 °	36.814540 ° -120.168660 °

Rating³: U

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¹ Sequential line number for this report. It does not reflect an issue No. or inspection ID.

² **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

Received by CVFPB on
July 26, 2013 via e-mail

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 23 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

On April 8, 2013, inspectors Ryan Larson, Gene Vaughan, Nathan Meisgeier, and Steve Mitchell from the U.S. Army Corps of Engineers (USACE) completed a joint Continuing Eligibility Inspection of the LSJLD - Unit 24 system. The inspection was conducted to verify proper maintenance, owner preparedness, component operation and status in the Rehabilitation and Inspection Program (RIP). The project map, report card, and detailed inspection report serve as a summary of the inspection.

The system is comprised of 1 segment:

System: LSJLD-Unit 24
Segment: Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass (L024)

The system rating is determined based on the USACE inspection checklist. The attached detailed report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items.

Rating Classification	Status	Time to Fix Before Becoming Inactive
Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

Based on observations made as part of the inspection, the LSJLD - Unit 24 system is rated Minimally Acceptable and remains active in the Rehabilitation and Inspection Program.

The following items were determined to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, encroachments, erosion/bank caving, and riprap revetments/bank protection (shown in yellow on the attached report card). Maintenance of all yellow items must be completed within two years from the date of this letter to bring these items to at least a minimally acceptable condition or the items will be noted as pink during the next inspection and will cause the system to become inactive. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern.

The report card and checklists are attached for the following system features: levee embankments and flood damage reduction channels.

When inspecting an encroachment item it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid encroachment permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the RIP will be adversely impacted by an issue outside the project easement.

The findings associated with this continuing eligibility inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable USACE inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Fresno County Office of Emergency Services, California Emergency Management Agency, and FEMA Region IX.

Sincerely,

Rick L. Poeppelman

Rick L. Poeppelman, P.E.
Chief, Engineering Division

Enclosures:
1) Report card
2) Map
3) Levee inspection report with photos

CEI 4/8/2013 LSJLD-Unit 24

Murakami

Larson

Nagy

Olsen

Perlea

Fontaine

Poeppelman

Y:\FP&Nav\ICW\!_Inspections_System Folders\LSJLD-Unit 24\2013 CEI\Supporting Info\Reports\CoverLetter_LSJLD-Unit 24_1.docx

cc:
SPK Flood Risk Manager
SPK Readiness
SPK Levee Safety
SPK NLD

LSJLD-Unit 24
Minimally Acceptable/Active

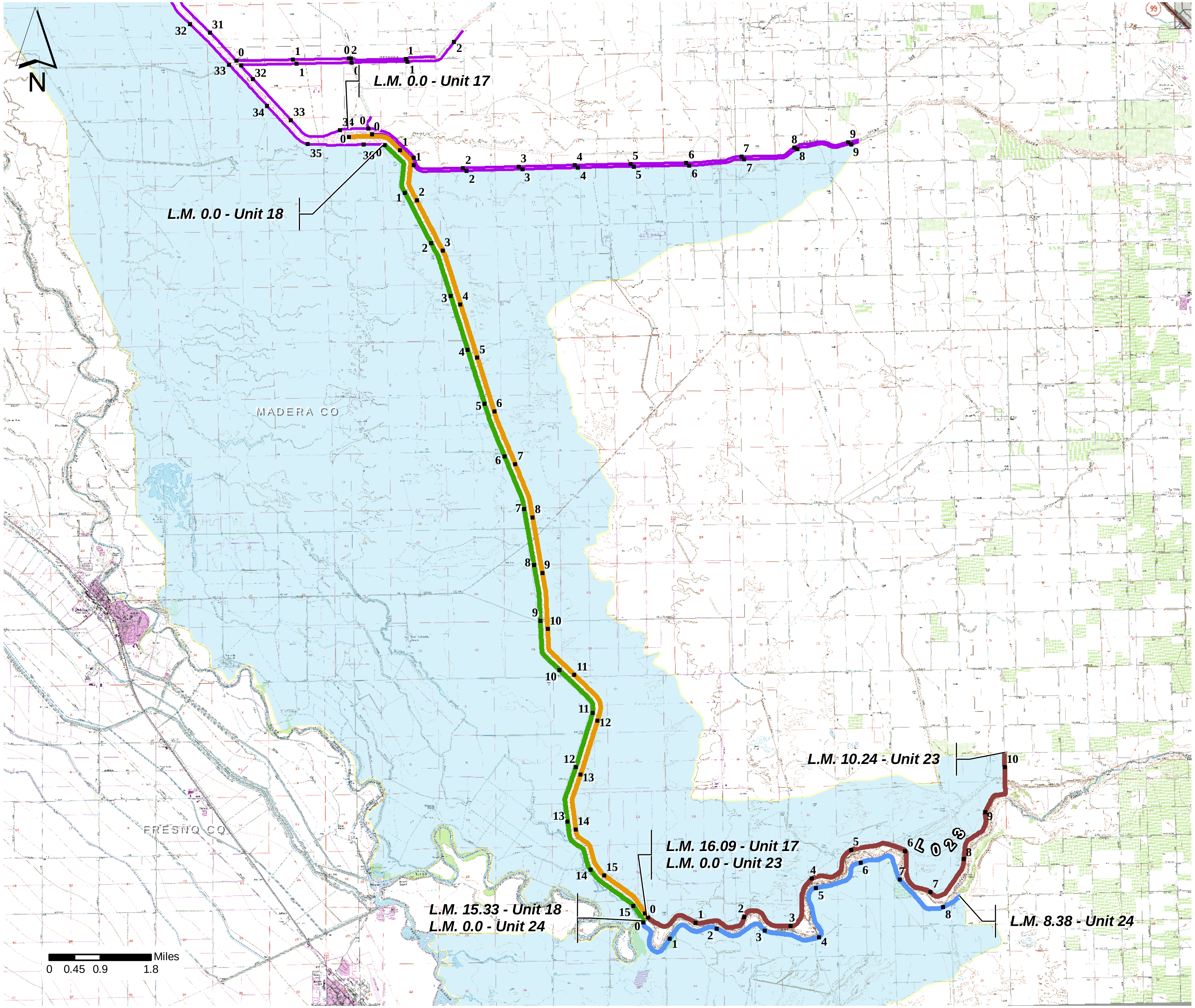
		Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass (L024)							
General	Operations and Maintenance Manuals								
	Emergency Supplies and Equipment								
	Flood Preparedness and Training								
Levee Embankments	Vegetation Growth	U							
	Sod Cover	N/A							
	Encroachments	U							
	Closure Structures	N/A							
	Slope Stability	A							
	Erosion/Bank Caving	U							
	Settlement	A							
	Depressions/Rutting	M							
	Cracking	A							
	Animal Control	M							
	Culverts/Discharge Pipes	N/A							
	Riprap Revetments & Bank Protection	U							
	Revetments other than Riprap	N/A							
	Underseepage Relief Wells/Toe Drainage Systems	N/A							
	Seepage	A							
Flood Damage Reduction Channels	Vegetation and Obstructions	A							
	Shoaling	M							
	Encroachments	A							
	Erosion	A							
	Concrete Surfaces	M							
	Tilting, Sliding, or Settlement of Concrete	N/A							
	Foundation of Concrete Structures	N/A							
	Slab and Monolith Joints	N/A							
	Flap Gates/Flap Valves/Pinch Valves	N/A							
	Riprap Revetments & Banks	N/A							
	Revetments other than Riprap	N/A							

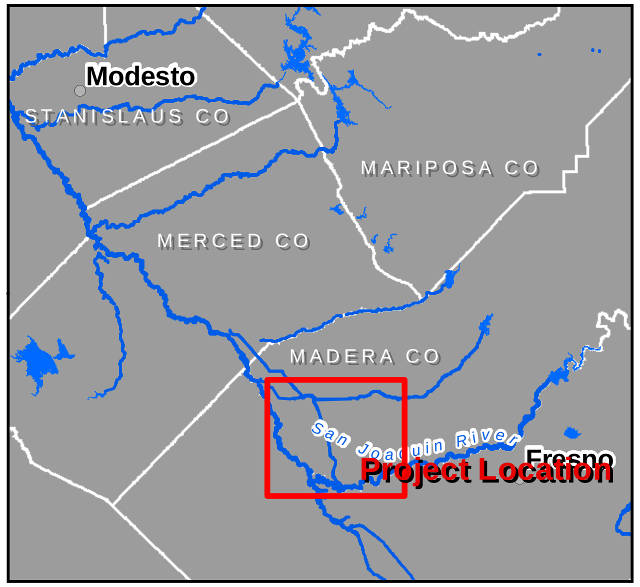
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 U	Not likely to prevent performance in next flood event / Active
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive
🟥 U	Likely prevents performance in next flood event / Inactive

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility





Map Legend

Project Levee: NLD SEGMENT (LIS Code)

- ▬ Unit 17, Chowchilla Bypass R bank (L017)
- ▬ Unit 18, Chowchilla Bypass L bank (L018)
- ▬ Unit 23, San Joaquin River R bank (L023)
- ▬ Unit 24, San Joaquin River L bank (L024)
- ▬ Other Federal Levees
- ▨ Protection Area
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
LOCATION MAP

LOWER SAN JOAQUIN
LEVEE DISTRICT
MAP - 3

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of Segment/System: Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass

Public Sponsor(s): Central Valley Flood Protection Board

Public Sponsor Representative: Richard Willoughby

Sponsor Phone: (916) 574-1206

Sponsor Email: richard@water.ca.gov

Corps of Engineers Inspector: Ryan Larson, Gene Vaughan, Nathan Meisgeier, Steve Mitchell Date of Inspection: April 8 - 8, 2013

Inspection Report Prepared By: Nathan Meisgeier Date Report Prepared: ______

Internal Technical Review (for Periodic Inspections) By: ______ Date of ITR: ______

Final Approval By: ______ Date Approved: ______

Type of Inspection:

☐ **Initial Eligibility Inspection**
☑ **Continuing Eligibility Inspection (Routine)**
☐ **Continuing Eligibility Inspection (Periodic)**

Overall Segment Rating:

☐ **Acceptable**
☐ **Minimally Acceptable**
☑ **Unacceptable**

Contents of this Report:

☑ **Instructions**
☐ **Initial Eligibility Inspection**
☑ **General Items for All Flood Control Works**
☑ **Levee Embankments**
☐ **Concrete Floodwalls**
☐ **Sheet Pile and Concrete I-walls**
☐ **Interior Drainage System**
☐ **Pump Stations**
☑ **FDR system Channels**

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Note: This inspection rating represents the Corps evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes if applicable. An Acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP. It is recommended for levee systems currently accredited bu the Federal Emergency Management Agency (FEMA) for NFIP purposes receiving a Corps Minimally Acceptable or Unacceptable rating be evaluated by the levee owner to determine the potential impacts of the certification for FEMA.

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Operations and Maintenance Manuals	**A**	**A**	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	
		M	Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		U	Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	**A**	**A**	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		M	The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	**A**	**A**	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		M	The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Unwanted Vegetation Growth[1]	U	**A**	The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
2. Sod Cover	NA	**A**	There is good coverage of sod over the levee.	
		M	Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U	Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A	Surface protection is provided by other means.	
3. Encroachments	U	**A**	No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M	Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
4. Closure Structures (Stop Log, Earthen Closures, Gates, or Sandbag Closures) (A or U only)	NA	**A**	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.	
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.	
		N/A	There are no closure structures along this component of the FDR system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Slope Stability	**A**	**A**	No slides, sloughs, tension cracking, slope depressions, or bulges are present.	
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.	
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.	
6. Erosion/ Bank Caving	**U**	**A**	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.	
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.	
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.	
7. Settlement[1]	**A**	**A**	No observed depressions in crown. Records exist and indicate no unexplained historical changes.	
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.	
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.	
8. Depressions/ Rutting	**M**	**A**	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.	
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.	
		U	There are depressions greater than 6 inches deep that will pond water.	
9. Cracking	**A**	**A**	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.	
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer then the height of the levee.	
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.	
10. Animal Control	**M**	**A**	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.	
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.	
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.	

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[1] Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
11. Culverts/ Discharge Pipes[1] (This item includes both concrete and corrugated metal pipes.)	N/A	**A**	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.	
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. HOWEVER: Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A	There are no discharge pipes/ culverts.	

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[1] The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should consider the age of the pipe, the diameter of the pipe, the apparent condition of the pipe, and the length of the pipe. If a pipe is entered for the purposes of inspection, the inspector should record observations with a video camera in order that the condition of the entire pipe, including all joints, can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee systems

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
12. Riprap Revetments & Bank Protection	**U**	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	**N/A**	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	**N/A**	**A**	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	**A**	**A**	No evidence or history of unrepaired seepage, saturated areas, or boils.	
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U	Evidence or history of active seepage, extensive saturated areas, or boils.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
1. Vegetation and Obstructions	A	A	No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	
		M	Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U	Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling[1] (sediment deposition)	M	A	No shoaling or minor, non-vegetated shoaling is present.	
		M	More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U	Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A	No head cutting or horizontal deviation observed.	
		M	Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U	Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

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[1] If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
5. Concrete Surfaces	M	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A	There are no concrete items in the channel.	
6. Tilting, Sliding or Settlement of Concrete Structures[1]	NA	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A	There are no concrete items in the channel.	
7. Foundation of Concrete Structures[2]	NA	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.	
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stabile until the next inspection.	
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A	There are no concrete items in the channel.	

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[1] The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

[2] Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines		Location/ Remarks/ Recommendations
8. Slab and Monolith Joints	NA	**A**	The joint material is in good condition. The exterior joint sealant is intact and cracking/ desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.	
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A	There are no concrete items in the channel.	
9. Flap Gates/Flap Valves/ Pinch Valves[1]	NA	**A**	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
		M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
		U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
		N/A	There are no flap gates.	
10. Riprap Revetments & Banks	NA	**A**	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11 Revetments other than Riprap	NA	**A**	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
		M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A	There are no such revetments protecting this feature of the system.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

[1] Proper operation of this item must be demonstrated during the inspection.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Periodic)

Levee Inspection Report of All Items - 2013

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: LSJLD

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass (L024)	Left	8.38	USACE	4/8/2013	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
1			Flood Damage Reduction Channels	Vegetation and Obstructions	OT	A	Trash rack in place at control structure : NA	36.773167 ° -120.285057 °	0.000000 ° 0.000000 °	0001 Y
2			Flood Damage Reduction Channels	Concrete Surfaces	OT	M	Spalling on upstream end of center support : Monitor	36.773232 ° -120.285075 °	0.000000 ° 0.000000 °	0002 Y
3			Levee Embankments	Unwanted Vegetation Growth	LS	U	Elderberry bush at LS toe with a rodent hole at the base of tree : NA	36.769998 ° -120.283045 °	0.000000 ° 0.000000 °	0003 Y
4			Levee Embankments	Encroachments	SC	U	Pipe thru levee for gravity drainage. Pipe has a flap gate on WS and headwalls on both ends. : Video inspect pipe thru levee. Confirm permit status	36.766853 ° -120.283308 °	0.000000 ° 0.000000 °	0004 Y
5			Levee Embankments	Seepage	LS	A	Rock on LS slope with filter fabric showing on LS hinge. Possible previous seepage location. WCLBSJ_002A (toe) written on stake : NA	36.765883 ° -120.282162 °	0.000000 ° 0.000000 °	0005 Y
6			Levee Embankments	Depressions/ Rutting	WS	M	Rutting less than 6" deep on WS slope. : repair	36.767033 ° -120.278530 °	0.000000 ° 0.000000 °	0006 Y
7			Levee Embankments	Encroachments	SC	U	Pipe thru levee with pump on LS. PVC daylights on WS. Stand pipe on LS hinge is bent. No closure valve at WS hinge. Permit 13735. Appears to meet permit conditions. : Confirm permit status. Video inspect pipe in levee.	36.769532 ° -120.275997 °	0.000000 ° 0.000000 °	0007 Y
8			Levee Embankments	Seepage	LS	A	Rock placed at LS toe : NA	36.769900 ° -120.275830 °	36.770980 ° -120.274990 °	0008
9			Levee Embankments	Seepage	LS	A	Rock placed on LS slope. Stake at LS hinge with WCLBSJ_005A written on it : NA	36.772093 ° -120.271885 °	0.000000 ° 0.000000 °	0009 Y
10			Levee Embankments	Seepage	LS	A	Rock placed on LS slope. Possible historical seepage location : NA	36.770683 ° -120.269250 °	0.000000 ° 0.000000 °	0011 Y
11			Levee Embankments	Seepage	LS	A	Rock on LS slope : NA	36.770543 ° -120.268082 °	0.000000 ° 0.000000 °	0012 Y
12			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Siphon breaker at LS hinge. Pump off LS toe. Could not inspect WS end of pipe. No positive closure at WS hinge. Permit 13085 : Video inspect pipe thru levee. Confirm permit status	36.771103 ° -120.266197 °	0.000000 ° 0.000000 °	0013 Y
13			Levee Embankments	Seepage	LS	A	Rock on LS from slope to crown : NA	36.771340 ° -120.265583 °	0.000000 ° 0.000000 °	0014
14			Flood Damage Reduction Channels	Encroachments	OT	A	Monitoring wells in channel : NA	36.771042 ° -120.260790 °	0.000000 ° 0.000000 °	0015 Y
15			Levee Embankments	Encroachments	LS	A	Monitoring well at LS toe and in easement : NA	36.770590 ° -120.260397 °	0.000000 ° 0.000000 °	0016 Y
16			Levee Embankments	Riprap Revetments & Bank Protection	WS	U	Bank protection on LS. Site of 1986 levee break. Rock/concrete hidden by dense vegetation : NA	36.769410 ° -120.257690 °	36.769550 ° -120.254970 °	0017 Y
17			Flood Damage Reduction Channels	Shoaling (sediment deposition)	OT	M	Sand piles in channel. : Ensure channel capacity is available	36.771610 ° -120.251820 °	36.772470 ° -120.250190 °	0018 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L024_2013_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic)

Levee Inspection Report of All Items - 2013

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: LSJLD

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass (L024)	Left	8.38	USACE	4/8/2013	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
18			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Pump is off toe. No positive closure at WS hinge. Siphon breaker at LS hinge. Pipe visible on WS. Permit number 13735. Appears to meet permit conditions. : Confirm permit status. Video inspect pipe thru levee	36.771762 ° -120.250937 °	0.000000 ° 0.000000 °	0019 Y
19			Levee Embankments	Animal Control	LS	M	Rodent holes on LS slope. : Control rodents and fill holes	36.769837 ° -120.241522 °	0.000000 ° 0.000000 °	0020 Y
20			Flood Damage Reduction Channels	Encroachments	OT	A	Monitoring well in channel : NA	36.769277 ° -120.237558 °	0.000000 ° 0.000000 °	0021 Y
21			Levee Embankments	Depressions/ Rutting	WS	M	Rutting on WS slope less than 6" deep : NA	36.767919 ° -120.232557 °	0.000000 ° 0.000000 °	0022 Y
22			Levee Embankments	Encroachments	SC	U	Pipe thru levee with screw gate at WS hinge. : Video inspect pipe thru levee. Confirm permit status	36.769199 ° -120.228452 °	0.000000 ° 0.000000 °	0023 Y
23			Levee Embankments	Encroachments	SC	U	Power poles and guy wires at WS slope and toe. : Confirm permit status	36.781186 ° -120.230159 °	0.000000 ° 0.000000 °	0024 Y
24			Levee Embankments	Erosion/ Bank Caving	WS	U	Erosion within 35' of waterside toe. Appears to cut into projected prism less than 2 feet. : Repair and prevent future erosion	36.781970 ° -120.224100 °	36.782170 ° -120.223450 °	0025 Y
25			Flood Damage Reduction Channels	Encroachments	OT	A	Monitoring wells in channel : NA	36.785060 ° -120.219154 °	0.000000 ° 0.000000 °	0026 Y
26			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Flap gate on waterside. Sediment was removed after the inspection so flap gate closes (photo 27_3). : Confirm permit status. Video inspect pipe thru levee.	36.787691 ° -120.213756 °	0.000000 ° 0.000000 °	0027 Y
27			Levee Embankments	Encroachments	SC	U	Power poles in both slopes : Confirm permit status	36.787669 ° -120.213864 °	0.000000 ° 0.000000 °	0028 Y
28			Levee Embankments	Encroachments	OT	M	Cuttings in channel : NA	36.788287 ° -120.209793 °	0.000000 ° 0.000000 °	0029 Y
29			Levee Embankments	Encroachments	SC	U	Pipe thru levee with flap gate on WS. Headwalls on both ends of pipe : Confirm permit status. Video inspect pipe thru levee	36.786594 ° -120.204700 °	0.000000 ° 0.000000 °	0030 Y
30			Levee Embankments	Unwanted Vegetation Growth	SC	U	Slopes obscured by grasses longer than 12" which prevent inspection : Trim grasses	36.772280 ° -120.284330 °	36.788180 ° -120.209650 °	0031 Y
31			Levee Embankments	Unwanted Vegetation Growth	WS	U	Trees larger than 2" in dia. at WS hinge. : NA	36.779230 ° -120.198810 °	36.775820 ° -120.195450 °	0032 Y
32			Levee Embankments	Encroachments	SC	U	Pipe thru levee with flapgate on WS end. Headwalls on both ends. : Confirm permit status. Video inspect pipe thru levee	36.775889 ° -120.195545 °	0.000000 ° 0.000000 °	0033 Y
33			Levee Embankments	Encroachments	LS	U	Irrigation line runs parallel to levee at LS toe. The line feeds irrigation valves located within 10' of toe. : Confirm permit status	36.775820 ° -120.195550 °	36.775970 ° -120.188170 °	0034 Y
34			Levee Embankments	Encroachments	SC	U	Barbed wire fence at WS hinge. : Confirm permit status	36.775920 ° -120.195610 °	36.778250 ° -120.184040 °	0035 Y
35			Levee Embankments	Encroachments	SC	U	Equipment stored at crown : Remove from project right of way	36.776208 ° -120.187816 °	0.000000 ° 0.000000 °	0036 Y
36			Levee Embankments	Encroachments	SC	U	Power poles in WS slope. Line crosses over crown : Confirm permit status	36.775994 ° -120.188113 °	0.000000 ° 0.000000 °	0037 Y

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[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L024_2013_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Periodic)

Levee Inspection Report of All Items - 2013

Project sponsor: Central Valley Flood Protection Board

Project Maintainer: LSJLD

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass (L024)	Left	8.38	USACE	4/8/2013	Ryan Larson

Index[1]	Levee Mile		Category	Item	Location[2]	Rating[3]	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. [4]
	Start	End						Start	End	Photo [5]
37			Levee Embankments	Encroachments	WS	U	Hose bib on WS slope next to chicken coop : Confirm permit status	36.776730 ° -120.186550 °	0.000000 ° 0.000000 °	0038 Y
38			Levee Embankments	Encroachments	SC	U	Pipe thru levee with valve on WS slope. We could not see waterward end of pipe thru fence and gate : Confirm permit status	36.776582 ° -120.186867 °	0.000000 ° 0.000000 °	0039 Y
39			Levee Embankments	Encroachments	SC	U	Pipe thru levee with flap gate on WS end. A flap gate was installed after the inspection (photo 40_3). : Confirm permit status. Video inspect pipe thru levee. Provide closure for pipe	36.777236 ° -120.185647 °	0.000000 ° 0.000000 °	0040 Y
40			Levee Embankments	Encroachments	LS	U	Power pole in LS slope : Confirm permit status	36.777549 ° -120.185163 °	0.000000 ° 0.000000 °	0041 Y
41			Levee Embankments	Encroachments	LS	U	Fence along LS toe of levee : Confirm permit status	36.777140 ° -120.185680 °	36.778290 ° -120.183960 °	0042 Y
42			Levee Embankments	Encroachments	SC	U	Pipe thru levee. Headwall and flap gate on WS. Sediment was cleaned out following the inspection (photo 43_3). : Video inspect pipe thru levee. Confirm permit status.	36.778099 ° -120.184372 °	0.000000 ° 0.000000 °	0043 Y

[1] Sequential line number for this report. It does not reflect an issue No. or inspection ID.

[2] **Location** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other (None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable (See Letter/Report Card For Color Coding Key), NA: Not Applicable

[4] USACE Issue No. used by USACE to match issue with entry in field inspection tool. The corresponding Inspect_ID value is USACE_CESPK_L024_2013_a_####.

[5] Indicates whether a photo was taken for this issue or not. If the photo is not included in this report, this indicates whether or not a photo is available upon request.

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0001
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Vegetation and Obstructions

Trash rack in place at control structure

USACE_CESPK_L024_2013_a_0001_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28505667°	.00000000°
36.77316667°	.00000000°
Rating³: A	

LIS Issue Number¹	0002
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Concrete Surfaces

Spalling on upstream end of center support

USACE_CESPK_L024_2013_a_0002_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28507500°	.00000000°
36.77323167°	.00000000°
Rating³: M	

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Elderberry bush at LS toe with a rodent hole at the base of tree

USACE_CESPK_L024_2013_a_0003_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28304500°	.00000000°
36.76999833°	.00000000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0003
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Elderberry bush at LS toe with a rodent hole at the base of tree

USACE_CESPK_L024_2013_a_0003_2.jpg

GPS Longitude/Latitude	
Start	End
-120.28304500° 36.76999833°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee for gravity drainage. Pipe has a flap gate on WS and headwalls on both ends.

USACE_CESPK_L024_2013_a_0004_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28330833° 36.76685333°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0004
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee for gravity drainage. Pipe has a flap gate on WS and headwalls on both ends.

USACE_CESPK_L024_2013_a_0004_2.jpg

GPS Longitude/Latitude	
Start	End
-120.28330833° 36.76685333°	.00000000° .00000000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock on LS slope with filter fabric showing on LS hinge. Possible previous seepage location. WCLBSJ_002A (toe) written on stake

USACE_CESPK_L024_2013_a_0005_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28216167°	.00000000°
36.76588333°	.00000000°
Rating[3]: A	

LIS Issue Number[1]	0005
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock on LS slope with filter fabric showing on LS hinge. Possible previous seepage location. WCLBSJ_002A (toe) written on stake

USACE_CESPK_L024_2013_a_0005_2.jpg

GPS Longitude/Latitude	
Start	End
-120.28216167°	.00000000°
36.76588333°	.00000000°
Rating[3]: A	

LIS Issue Number[1]	0006
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rutting less than 6" deep on WS slope.

USACE_CESPK_L024_2013_a_0006_1.jpg

GPS Longitude/Latitude	
Start	End
-120.27853000°	.00000000°
36.76703333°	.00000000°
Rating[3]: M	

[1] The issue number may be repeated if there is more than one photo for that issue.

[2] **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with pump on LS. PVC daylights on WS. Stand pipe on LS hinge is bent. No closure valve at WS hinge. Permit 13735. Appears to meet permit conditions.

USACE_CESPK_L024_2013_a_0007_1.jpg

GPS Longitude/Latitude	
Start	End
-120.27599667°	.00000000°
36.76953167°	.00000000°
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with pump on LS. PVC daylights on WS. Stand pipe on LS hinge is bent. No closure valve at WS hinge. Permit 13735. Appears to meet permit conditions.

USACE_CESPK_L024_2013_a_0007_2.jpg

GPS Longitude/Latitude	
Start	End
-120.27599667°	.00000000°
36.76953167°	.00000000°
Rating³: U	

LIS Issue Number¹	0007
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with pump on LS. PVC daylights on WS. Stand pipe on LS hinge is bent. No closure valve at WS hinge. Permit 13735. Appears to meet permit conditions.

USACE_CESPK_L024_2013_a_0007_3.jpg

GPS Longitude/Latitude	
Start	End
-120.27599667°	.00000000°
36.76953167°	.00000000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock placed on LS slope. Stake at LS hinge with WCLBSJ_005A written on it

USACE_CESPK_L024_2013_a_0009_2.jpg

GPS Longitude/Latitude	
Start	End
-120.27188500°	.00000000°
36.77209333°	.00000000°
Rating³: A	

LIS Issue Number¹	0009
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock placed on LS slope. Stake at LS hinge with WCLBSJ_005A written on it

USACE_CESPK_L024_2013_a_0009_1.jpg

GPS Longitude/Latitude	
Start	End
-120.27188500°	.00000000°
36.77209333°	.00000000°
Rating³: A	

LIS Issue Number¹	0011
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock placed on LS slope. Possible historical seepage location

USACE_CESPK_L024_2013_a_0011_1.jpg

GPS Longitude/Latitude	
Start	End
-120.26925000°	.00000000°
36.77068333°	.00000000°
Rating³: A	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0012
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Seepage

Rock on LS slope

USACE_CESPK_L024_2013_a_0012_1.jpg

GPS Longitude/Latitude	
Start	End
-120.26808167°	.00000000°
36.77054333°	.00000000°
Rating³: A	

LIS Issue Number¹	0013
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Siphon breaker at LS hinge. Pump off LS toe. Could not inspect WS end of pipe. No positive closure at WS hinge. Permit 13085

USACE_CESPK_L024_2013_a_0013_1.jpg

GPS Longitude/Latitude	
Start	End
-120.26619667°	.00000000°
36.77110333°	.00000000°
Rating³: U	

LIS Issue Number¹	0015
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Encroachments

Monitoring wells in channel

USACE_CESPK_L024_2013_a_0015_1.jpg

GPS Longitude/Latitude	
Start	End
-120.26079000°	.00000000°
36.77104167°	.00000000°
Rating³: A	

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¹ The issue number may be repeated if there is more than one photo for that issue.
² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)
³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0016
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Monitoring well at LS toe and in easement

USACE_CESPK_L024_2013_a_0016_1.jpg

GPS Longitude/Latitude	
Start	End
-120.26039667°	.00000000°
36.77059000°	.00000000°
Rating³: A	

LIS Issue Number¹	0017
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Riprap Revetments & Bank Protection

Bank protection on LS. Site of 1986 levee break. Rock/concrete hidden by dense vegetation

USACE_CESPK_L024_2013_a_0017_1.jpg

GPS Longitude/Latitude	
Start	End
-120.25769000°	-120.25497000°
36.76941000°	36.76955000°
Rating³: U	

LIS Issue Number¹	0018
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Shoaling (sediment deposition)

Sand piles in channel.

USACE_CESPK_L024_2013_a_0018_1.jpg

GPS Longitude/Latitude	
Start	End
-120.25182000°	-120.25019000°
36.77161000°	36.77247000°
Rating³: M	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Pump is off toe. No positive closure at WS hinge. Siphon breaker at LS hinge. Pipe visible on WS. Permit number 13735. Appears to meet permit conditions.

USACE_CESPK_L024_2013_a_0019_1.jpg

GPS Longitude/Latitude	
Start	End
-120.25093667° 36.77176167°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0019
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Pump is off toe. No positive closure at WS hinge. Siphon breaker at LS hinge. Pipe visible on WS. Permit number 13735. Appears to meet permit conditions.

USACE_CESPK_L024_2013_a_0019_2.jpg

GPS Longitude/Latitude	
Start	End
-120.25093667° 36.77176167°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0020
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Animal Control

Rodent holes on LS slope.

USACE_CESPK_L024_2013_a_0020_1.jpg

GPS Longitude/Latitude	
Start	End
-120.24152167° 36.76983667°	.00000000° .00000000°
Rating³: M	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0021
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Encroachments

Monitoring well in channel

USACE_CESPK_L024_2013_a_0021_1.jpg

GPS Longitude/Latitude	
Start	End
-120.23755813°	.00000000°
36.76927722°	.00000000°
Rating³: A	

LIS Issue Number¹	0022
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Depressions/ Rutting

Rutting on WS slope less than 6" deep

USACE_CESPK_L024_2013_a_0022_1.jpg

GPS Longitude/Latitude	
Start	End
-120.23255747°	.00000000°
36.76791931°	.00000000°
Rating³: M	

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with screw gate at WS hinge.

USACE_CESPK_L024_2013_a_0023_1.jpg

GPS Longitude/Latitude	
Start	End
-120.22845153°	.00000000°
36.76919872°	.00000000°
Rating³: U	

---

[1] The issue number may be repeated if there is more than one photo for that issue.

[2] **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0023
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with screw gate at WS hinge.

USACE_CESPK_L024_2013_a_0023_2.jpg

GPS Longitude/Latitude	
Start	End
-120.22845153° 36.76919872°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0024
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Power poles and guy wires at WS slope and toe.

USACE_CESPK_L024_2013_a_0024_1.jpg

GPS Longitude/Latitude	
Start	End
-120.23015930° 36.78118570°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving

Erosion within 35' of waterside toe. Appears to cut into projected prism less than 2 feet.

USACE_CESPK_L024_2013_a_0025_1.jpg

GPS Longitude/Latitude	
Start	End
-120.22410000° 36.78197000°	-120.22345000° 36.78217000°
Rating³: U	

---

¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0025
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Erosion/ Bank Caving
Erosion within 35' of waterside toe. Appears to cut into projected prism less than 2 feet.	

USACE_CESPK_L024_2013_a_0025_2.jpg

GPS Longitude/Latitude	
Start	End
-120.22410000° 36.78197000°	-120.22345000° 36.78217000°
Rating³: U	

LIS Issue Number¹	0026
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Channels
Item	Encroachments
Monitoring wells in channel	

USACE_CESPK_L024_2013_a_0026_1.jpg

GPS Longitude/Latitude	
Start	End
-120.21915392° 36.78506009°	.00000000° .00000000°
Rating³: A	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Pipe thru levee. Flap gate on waterside. Sediment was removed after the inspection so flap gate closes (photo 27_3).	

USACE_CESPK_L024_2013_a_0027_1.jpg

GPS Longitude/Latitude	
Start	End
-120.21375593° 36.78769057°	.00000000° .00000000°
Rating³: U	

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[1] The issue number may be repeated if there is more than one photo for that issue.

[2] **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Flap gate on waterside. Sediment was removed after the inspection so flap gate closes (photo 27_3).

USACE_CESPK_L024_2013_a_0027_2.jpg

GPS Longitude/Latitude	
Start	End
-120.21375593° 36.78769057°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0027
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Flap gate on waterside. Sediment was removed after the inspection so flap gate closes (photo 27_3).

USACE_CESPK_L024_2013_a_0027_3.jpg

GPS Longitude/Latitude	
Start	End
-120.21375593° 36.78769057°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0028
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Power poles in both slopes

USACE_CESPK_L024_2013_a_0028_1.jpg

GPS Longitude/Latitude	
Start	End
-120.21386378° 36.78766917°	.00000000° .00000000°
Rating³: U	

¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0029
Start Levee Mile	
End Levee Mile	
Location²	Other (Specify in Remarks)
Category	Levee Embankments
Item	Encroachments

Cuttings in channel

USACE_CESPK_L024_2013_a_0029_1.jpg

GPS Longitude/Latitude	
Start	End
-120.20979332° 36.78828749°	.00000000° .00000000°
Rating³: M	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flap gate on WS. Headwalls on both ends of pipe

USACE_CESPK_L024_2013_a_0030_1.jpg

GPS Longitude/Latitude	
Start	End
-120.20470040° 36.78659429°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0030
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flap gate on WS. Headwalls on both ends of pipe

USACE_CESPK_L024_2013_a_0030_2.jpg

GPS Longitude/Latitude	
Start	End
-120.20470040° 36.78659429°	.00000000° .00000000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Slopes obscured by grasses longer than 12" which prevent inspection

USACE_CESPK_L024_2013_a_0031_1.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Slopes obscured by grasses longer than 12" which prevent inspection

USACE_CESPK_L024_2013_a_0031_2.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth

Slopes obscured by grasses longer than 12" which prevent inspection

USACE_CESPK_L024_2013_a_0031_3.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

---

¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Slopes obscured by grasses longer than 12" which prevent inspection	

USACE_CESPK_L024_2013_a_0031_4.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Slopes obscured by grasses longer than 12" which prevent inspection	

USACE_CESPK_L024_2013_a_0031_5.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

LIS Issue Number¹	0031
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Slopes obscured by grasses longer than 12" which prevent inspection	

USACE_CESPK_L024_2013_a_0031_6.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number[1]	0031
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Slopes obscured by grasses longer than 12" which prevent inspection	

USACE_CESPK_L024_2013_a_0031_8.jpg

GPS Longitude/Latitude	
Start	End
-120.28433000° 36.77228000°	-120.20965000° 36.78818000°
Rating[3]: U	

LIS Issue Number[1]	0032
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Unwanted Vegetation Growth
Trees larger than 2" in dia. at WS hinge.	

USACE_CESPK_L024_2013_a_0032_1.jpg

GPS Longitude/Latitude	
Start	End
-120.19881000° 36.77923000°	-120.19545000° 36.77582000°
Rating[3]: U	

LIS Issue Number[1]	0033
Start Levee Mile	
End Levee Mile	
Location[2]	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments
Pipe thru levee with flapgate on WS end. Headwalls on both ends.	

USACE_CESPK_L024_2013_a_0033_1.jpg

GPS Longitude/Latitude	
Start	End
-120.19554496° 36.77588856°	.00000000° .00000000°
Rating[3]: U	

---

[1] The issue number may be repeated if there is more than one photo for that issue.

[2] **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0033
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flapgate on WS end. Headwalls on both ends.

USACE_CESPK_L024_2013_a_0033_2.jpg

GPS Longitude/Latitude	
Start	End
-120.19554496° 36.77588856°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0034
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Irrigation line runs parallel to levee at LS toe. The line feeds irrigation valves located within 10' of toe.

USACE_CESPK_L024_2013_a_0034_1.jpg

GPS Longitude/Latitude	
Start	End
-120.19555000° 36.77582000°	-120.18817000° 36.77597000°
Rating³: U	

LIS Issue Number¹	0035
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Barbed wire fence at WS hinge.

USACE_CESPK_L024_2013_a_0035_1.jpg

GPS Longitude/Latitude	
Start	End
-120.19561000° 36.77592000°	-120.18404000° 36.77825000°
Rating³: U	

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¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0036
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Equipment stored at crown

USACE_CESPK_L024_2013_a_0036_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18781593°	.00000000°
36.77620755°	.00000000°
Rating³: U	

LIS Issue Number¹	0037
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Power poles in WS slope. Line crosses over crown

USACE_CESPK_L024_2013_a_0037_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18811318°	.00000000°
36.77599378°	.00000000°
Rating³: U	

LIS Issue Number¹	0038
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (W/S)
Category	Levee Embankments
Item	Encroachments

Hose bib on WS slope next to chicken coop

USACE_CESPK_L024_2013_a_0038_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18655046°	.00000000°
36.77673048°	.00000000°
Rating³: U	

---

¹ The issue number may be repeated if there is more than one photo for that issue.
² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)
³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0039
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with valve on WS slope. We could not see waterward end of pipe thru fence and gate

USACE_CESPK_L024_2013_a_0039_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18686697° 36.77658186°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flap gate on WS end. A flap gate was installed after the inspection (photo 40_3).

USACE_CESPK_L024_2013_a_0040_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18564715° 36.77723626°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flap gate on WS end. A flap gate was installed after the inspection (photo 40_3).

USACE_CESPK_L024_2013_a_0040_2.jpg

GPS Longitude/Latitude	
Start	End
-120.18564715° 36.77723626°	.00000000° .00000000°
Rating³: U	

---

¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0040
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee with flap gate on WS end.   A flap gate was installed after the inspection (photo 40_3).

USACE_CESPK_L024_2013_a_0040_3.jpg

GPS Longitude/Latitude	
Start	End
-120.18564715° 36.77723626°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0041
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Power pole in LS slope

USACE_CESPK_L024_2013_a_0041_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18516272° 36.77754885°	.00000000° .00000000°
Rating³: U	

LIS Issue Number¹	0042
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope Only (L/S)
Category	Levee Embankments
Item	Encroachments

Fence along LS toe of levee

USACE_CESPK_L024_2013_a_0042_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18568000° 36.77714000°	-120.18396000° 36.77829000°
Rating³: U	

---

¹ The issue number may be repeated if there is more than one photo for that issue.

² Location: CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

³ Rating: A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

US Army Corps of Engineers (USACE) - Sacramento District

PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Periodic) of LSJLD-Unit 24 Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
Lower San Joaquin LD - Unit 24, San Joaquin River left bank above Chowchilla Bypass(L024)	Left	8.384	USACE	4/8/2013	Ryan Larson

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Headwall and flap gate on WS. Sediment was cleaned out following the inspection (photo 43_3).

USACE_CESPK_L024_2013_a_0043_1.jpg

GPS Longitude/Latitude	
Start	End
-120.18437219°	.00000000°
36.77809904°	.00000000°
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Headwall and flap gate on WS. Sediment was cleaned out following the inspection (photo 43_3).

USACE_CESPK_L024_2013_a_0043_2.jpg

GPS Longitude/Latitude	
Start	End
-120.18437219°	.00000000°
36.77809904°	.00000000°
Rating³: U	

LIS Issue Number¹	0043
Start Levee Mile	
End Levee Mile	
Location²	Levee Slope and Crown
Category	Levee Embankments
Item	Encroachments

Pipe thru levee. Headwall and flap gate on WS. Sediment was cleaned out following the inspection (photo 43_3).

USACE_CESPK_L024_2013_a_0043_3.jpg

GPS Longitude/Latitude	
Start	End
-120.18437219°	.00000000°
36.77809904°	.00000000°
Rating³: U	

---

[1] The issue number may be repeated if there is more than one photo for that issue.

[2] **Location:** CR: Crown, LS: Levee Slope Only (Land Side), SC: Levee Slope And Crown, OT: Other(None of the above), WS: Levee Slope Only (Water Side)

[3] **Rating:** A: Acceptable, M: Minimally Acceptable, U: Unacceptable(See Letter/Report Card for Color Coding Key), NA: Not Applicable

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 10 2010

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the findings of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area (MA) 09 - City of Sacramento - American River left bank system was conducted between January 5, 2010 and February 8, 2010. The system is comprised of six segments.

Segment Name
American River Flood Control District (FCD) - Unit 4, American River left bank
American River FCD - Unit 5, Sacramento River
City of Sacramento - Sacramento River left bank
Maintenance Area 09 - Sutterville Rd to Freeport
Maintenance Area 09 - Freeport to Hood
Maintenance Area 09 - Hood to Snodgrass Slough

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Based on observations made as part of the inspection, the Maintenance Area (MA) 09 - City of Sacramento - American River left bank system is rated unacceptable because of encroachments and seepage (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the MA 09 - City of Sacramento - American River left bank system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth was determined to be unacceptable but an engineering determination concluded it would not prevent the system from performing as intended during the next flood event. Vegetation maintenance should be conducted in accordance with the Framework.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board (CVFPB), 2) the Corps had no objection to the issuing of the permit *and* 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency

Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, FEMA Region IX, and the Congressional delegation as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

MA 09 – City of Sacramento – American River Left Bank Levee System

The US Army Corps of Engineers (USACE) is undertaking a nationwide execution of floodwall/levee project Periodic Inspections in support of the American Recovery and Reinvestment Act of 2009.

The USACE Levee Safety Program mission is to assess the integrity and viability of levee/floodwall systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of levee/floodwall systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>MA 09 – City of Sacramento – American River Left Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000441
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 4, American River left bank</td><td>5204000394</td><td>M</td></tr>
<tr><td>Unit 5, Sacramento River</td><td>5204000399</td><td>M</td></tr>
<tr><td>City of Sacramento – Sacramento River left bank</td><td>5204000441</td><td>U</td></tr>
<tr><td>Maintenance Area 09 – Sutterville Rd to Freeport</td><td>5204000611</td><td>U</td></tr>
<tr><td>Maintenance Area 09 – Freeport to Hood</td><td>5204000612</td><td>U</td></tr>
<tr><td>Maintenance Area 09 – Hood to Snodgrass Slough</td><td>5204000613</td><td>M</td></tr>
</table>
</td></tr>
</table>

USACE Division/District	South Pacific Division / Sacramento District
USACE Assigned System Rating *	Assigned Rating: Unacceptable
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Active
Preparing Contractor Name and Address	Hultgren-Tillis Engineers 2221 Commerce Avenue, Suite A-1 Concord, California 94520

* System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items* rated "unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
*Refer to Attachment C.

The Periodic Inspection has also identified Items* rated "unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
*Refer to Attachment C.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Michael Mahoney, P.E.
Levee Safety Officer

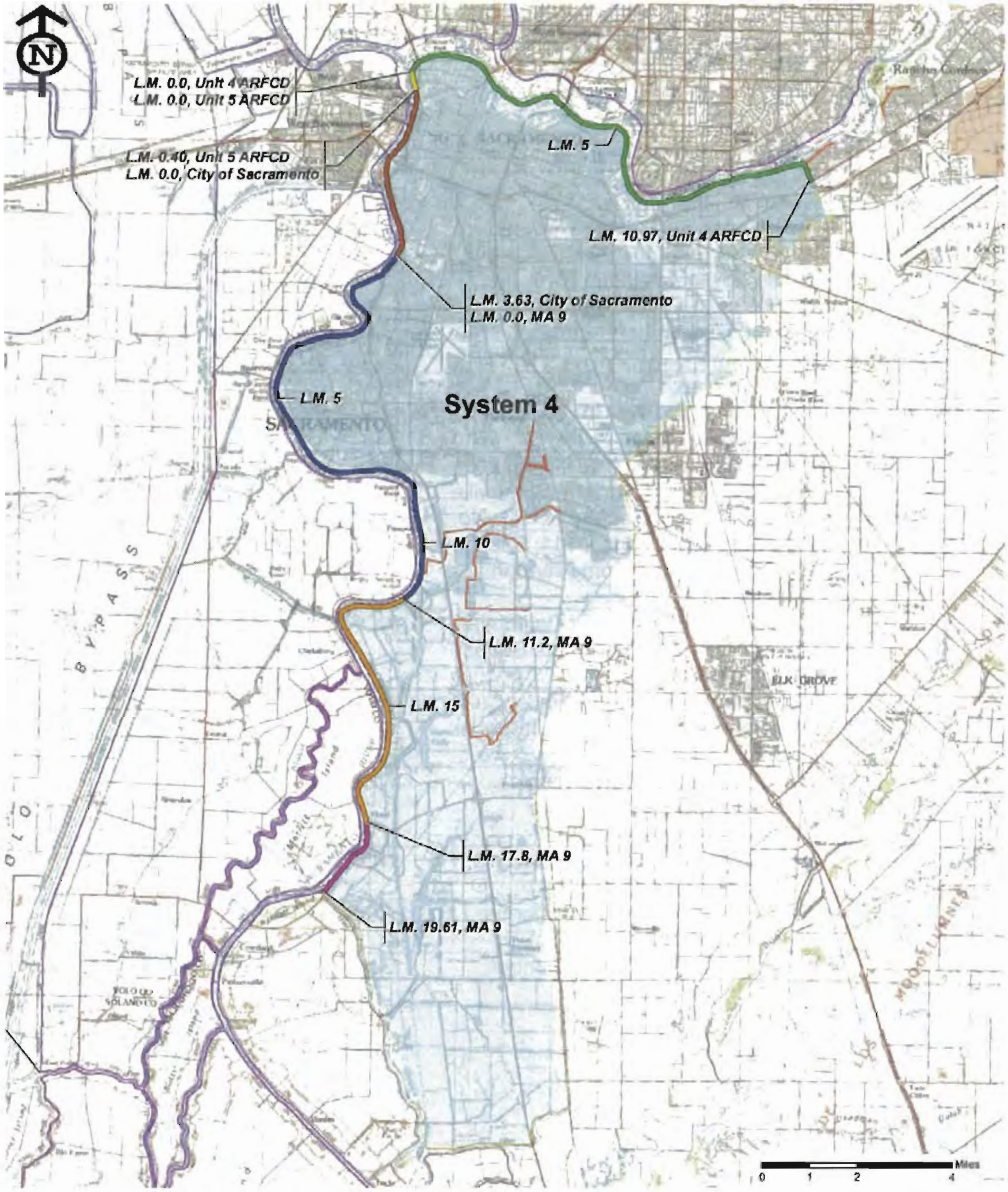
cc:

CO-E

CO-OR

ED

ED-G



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Map Miles)

SEGMENT Levee Names

- 🟩 ARFCD - Unit 4 American River left bank (AR04 - 10.67)
- 🟨 ARFCD - Unit 5, Sacramento River (AR05 - 0.405)
- 🟫 City of Sacramento (SACD - 3.689)
- 🟦 MA 9 - Sutterville Rd to Freeport (MA9A - 11.21)
- 🟧 MA 9 - Freeport to Hood (MA9B - 6.36)
- 🟪 MA 9 - Hood to Snodgrass Slough (MA9C - 1.78)
- — Other Federal Levees
- — Non-Federal Levees (PL84-99)
- ▨ Protection Area

USGS Quadrangles (100k)
SACRAMENTO, 1994
LODI, 1993

FEDERAL LEVEE PROJECTS
SYSTEM MAP

MA 9 - City of Sacramento - American River, Left Bank

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

MA 09 - City of Sacramento, American River Left Bank Levee System Unacceptable-Active

	ARFCD - Unit 4, American River Left Bank	ARFCD - Unit 5, Sacramento River	City of Sacramento	MA 09 - Sutterville Rd to Freeport	MA 09 - Freeport to Hood	MA 09 - Hood to Snodgress Slough			
Operations and Maintenance Manuals	M	M	M	M	A	A			
Emergency Supplies and Equipment	A	A	A	A	A	A			
Flood Preparedness and Training	A	A	A	A	A	A			
Unwanted Vegetation Growth	U	U	U	U	U	U			
Sod Cover	A	A	M	M	M	A			
Encroachments	U	U	U	U	U	U			
Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A			
Slope Stability	M	A	M	M	M	M			
Erosion/Bank Caving	M	M	M	M	M	M			
Settlement	A	A	A	A	A	A			
Depressions/Rutting	M	A	A	M	A	A			
Cracking	A	A	A	A	A	A			
Animal Control	M	M	M	M	M	M			
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A			
Riprap Revetments & Bank Protection	M	M	M	M	M	A			
Revetments other than Riprap	N/A	N/A	M	M	N/A	N/A			
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A			
Seepage	A	A	A	A	U	A			
Flood Wall	U	N/A	U	A	N/A	N/A			

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

July 6, 2010

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 8 - 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area 13 Unit 1 – Cherokee Canal Right Bank Levee System was conducted between March 14, 2011 and April 7, 2011. The system is comprised of one segment.

System: Maintenance Area 13 Unit 1 – Cherokee Canal Right Bank
Unit 1, Cherokee Canal Right Bank

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Maintenance Area 13 Unit 1 – Cherokee Canal Right Bank Levee System is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, slope stability, depression/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E. FOR
Colonel, U.S. Army
District Commander

AARON LANASCA
LTC EN
DPTY CDR

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Maintenance Area 13 Unit 1 - Cherokee Canal Right Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Maintenance Area 13 Unit 1 - Cherokee Canal Right Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000631
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 1, Cherokee Canal right bank (M13D)</td><td>5204000631</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Contractor Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

Maintenance Area 13 Unit 1 -
Cherokee Canal Right Bank
Unacceptable - Inactive

	Unit 1, Cherokee Canal right bank (M13D)
General Items	
Operations and Maintenance Manuals	M
Emergency Supplies and Equipment	A
Flood Preparedness and Training	A
Levee Embankment Items	
Vegetation Growth	U
Sod Cover	U
Encroachments	U
Closure Structures	N/A
Slope Stability	U
Erosion/Bank Caving	M
Settlement	A
Depressions/Rutting	U
Cracking	A
Animal Control	U
Culverts/Discharge Pipes	N/A
Riprap Revetments & Bank Protection	U
Revetments other than Riprap	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A
Seepage	M

Segment & System Ratings/PL 84-99 Eligibility

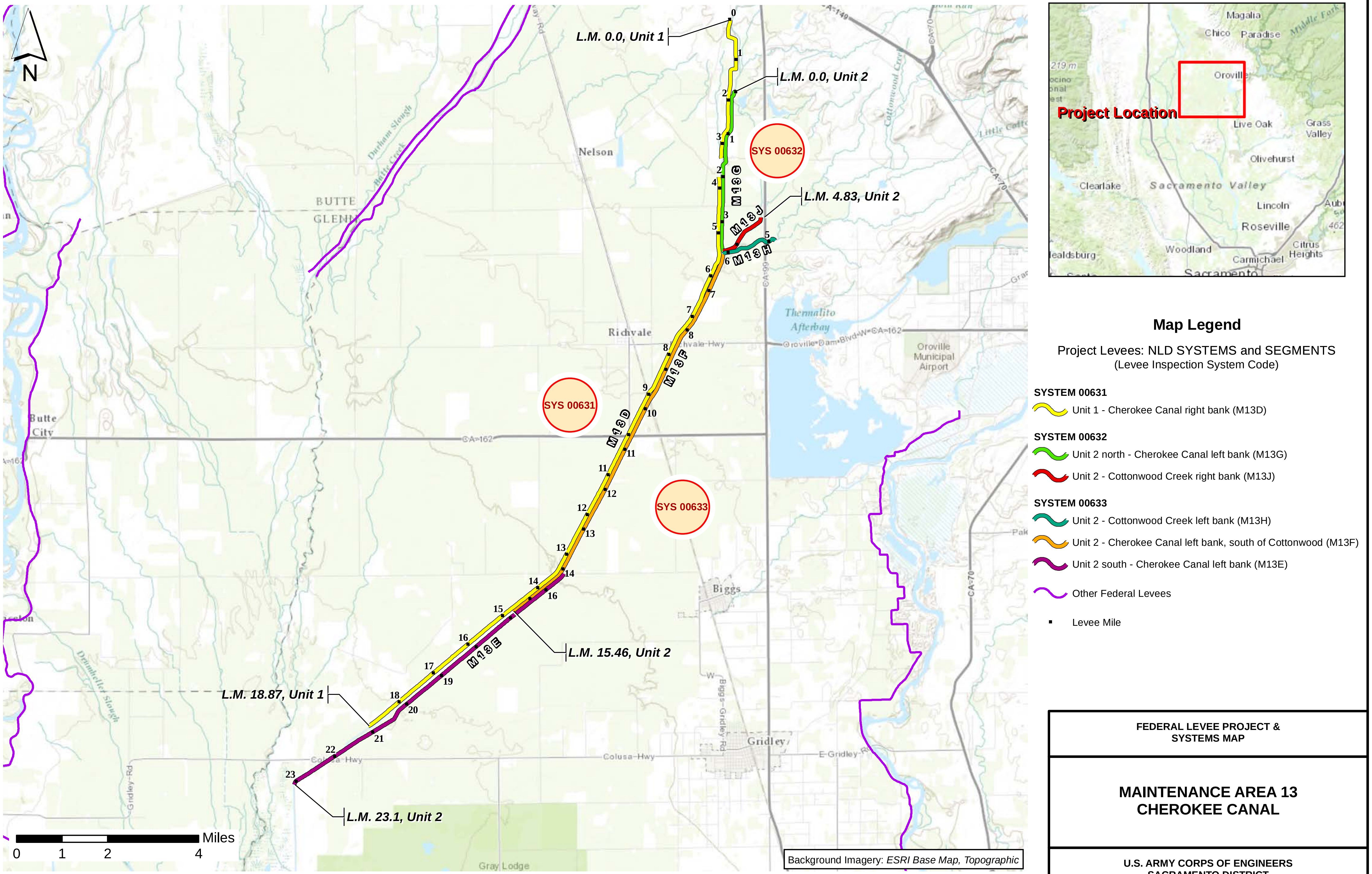
Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

7/29/2011
Revised - 10/3/2012



Background Imagery: *ESRI Base Map, Topographic*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 00631

- Unit 1 - Cherokee Canal right bank (M13D)

SYSTEM 00632

- Unit 2 north - Cherokee Canal left bank (M13G)
- Unit 2 - Cottonwood Creek right bank (M13J)

SYSTEM 00633

- Unit 2 - Cottonwood Creek left bank (M13H)
- Unit 2 - Cherokee Canal left bank, south of Cottonwood (M13F)
- Unit 2 south - Cherokee Canal left bank (M13E)

- Other Federal Levees

▪ Levee Mile

FEDERAL LEVEE PROJECT &
SYSTEMS MAP

MAINTENANCE AREA 13
CHEROKEE CANAL

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 8 - 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area 13 Unit 2 – North Cherokee Canal Left Bank Levee System was conducted between March 14, 2011 and April 7, 2011. The system is comprised of two segments.

System: Maintenance Area 13 Unit 2 – North Cherokee Canal Left Bank
Unit 2 North, Cherokee Canal Left Bank Levee System
Unit 2, Cottonwood Creek Right Bank

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Maintenance Area 13 Unit 2 – North Cherokee Canal Left Bank Levee System is rated unacceptable because of encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation and depression/rutting were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E. for
Colonel, U.S. Army
District Commander

CHADEN LEMASTER
LTC, EN
DPTY CDR

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Maintenance Area 13 Unit 2 North - Cherokee Canal Left Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation’s flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Maintenance Area 13 Unit 2 North - Cherokee Canal Left Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000632
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 2 north, Cherokee Canal left bank (M13G)</td><td>5204000632</td><td>U</td></tr>
<tr><td>Unit 2, Cottonwood Creek right bank (M13J)</td><td>5204000638</td><td>M</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Contractor Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 2, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 2, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

USACE conducted a site visit on October 2, 2012 in order to clarify comments provided by the CVFPB regarding the following points:

- USACE_CESPK_M13G_2011_p_0009: Gate is clear of debris, sediment and irrigation pipes. Rating was changed from red to yellow, as pipe is still lacking a video inspection.

- USACE_CESPK_M13G_2011_p_0064: Fill material has been placed at erosion site. Rating was changed from red U to M, as a repair was made but likely is not sufficient for long term erosion protection (no compaction or gradation specifications were provided to USACE for this repair).

- USACE_CESPK_M13G_2011_p_0172: Gate is clear of debris and sediment. Rating was changed from red to yellow, as pipe is still lacking a video inspection.

In addition, point USACE_CESPK_M13J_2011_p_0010 was changed from red to yellow. The closure was evident in pictures, but no video inspection has been performed. This changes the overall segment rating for Unit 2, Cottonwood Creek right bank from Unacceptable to Minimally Acceptable, as there are no red items for this segment. However, this system remains Unacceptable due to red items in the other segment.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

Maintenance Area 13 Unit 2 North - Cherokee Canal Left Bank
Unacceptable - Inactive

	Unit 2 north, Cherokee Canal left bank (M13G)	Unit 2, Cottonwood Creek right bank (M13J)
General Items		
Operations and Maintenance Manuals	M	M
Emergency Supplies and Equipment	A	A
Flood Preparedness and Training	A	A
Levee Embankment Items		
Vegetation Growth	U	U
Sod Cover	NA	M
Encroachments	U	U
Closure Structures	N/A	N/A
Slope Stability	M	A
Erosion/Bank Caving	M	M
Settlement	A	A
Depressions/Rutting	U	A
Cracking	M	A
Animal Control	U	U
Culverts/Discharge Pipes	N/A	N/A
Riprap Revetments & Bank Protection	A	N/A
Revetments other than Riprap	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A
Seepage	A	A

Segment & System Ratings/PL 84-99 Eligibility

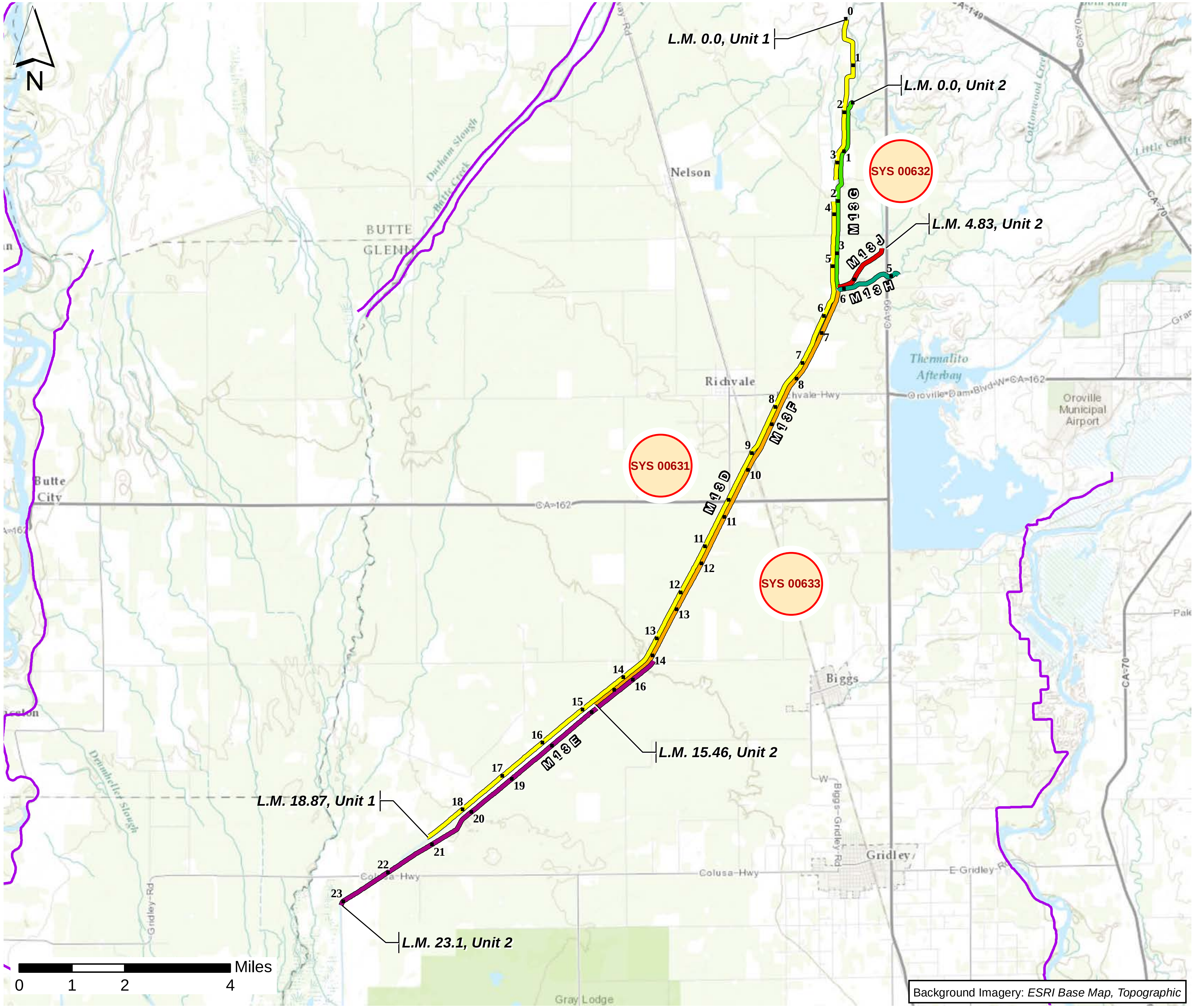
Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Not Likely to Prevent Performance In Next Flood Event

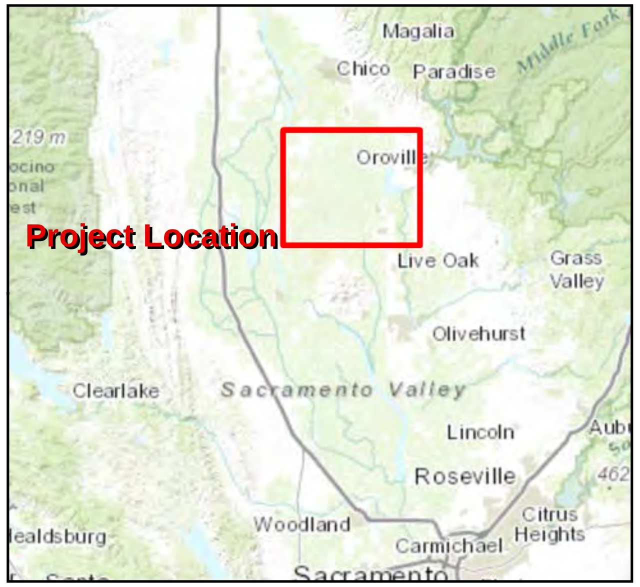
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

7/29/2011
Revised - 10/3/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 00631

- Unit 1 - Cherokee Canal right bank (M13D)

SYSTEM 00632

- Unit 2 north - Cherokee Canal left bank (M13G)
- Unit 2 - Cottonwood Creek right bank (M13J)

SYSTEM 00633

- Unit 2 - Cottonwood Creek left bank (M13H)
- Unit 2 - Cherokee Canal left bank, south of Cottonwood (M13F)
- Unit 2 south - Cherokee Canal left bank (M13E)

- Other Federal Levees

▪ Levee Mile

FEDERAL LEVEE PROJECT &
SYSTEMS MAP

MAINTENANCE AREA 13
CHEROKEE CANAL

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

MAY 8 - 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area 13 Unit 2 – South Cherokee Canal Left Bank Levee System was conducted between March 14, 2011 and April 7, 2011. The system is comprised of three segments.

System: Maintenance Area 13 Unit 2 – South Cherokee Canal Left Bank
Unit 2, Cottonwood Creek Left Bank
Unit 2, Cherokee Canal Left Bank South of Cottonwood Creek
Unit 2 South, Cherokee Canal Left Bank

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Maintenance Area 13 Unit 2 – South Cherokee Canal Left Bank Levee System is rated unacceptable because of encroachments, slope stability, erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, depression/rutting, and riprap revetment were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system

rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

[illegible] LEHMAN
LTC for
DIST CDR

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Maintenance Area 13 Unit 2 South - Cherokee Canal Left Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Maintenance Area 13 Unit 2 South - Cherokee Canal Left Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000633
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 2, Cottonwood Creek Left Bank (M13H)</td><td>5204000639</td><td>U</td></tr>
<tr><td>Unit 2, Cherokee Canal Left Bank South of Cottonwood Creek (M13F)</td><td>5204000633</td><td>U</td></tr>
<tr><td>Unit 2 South, Cherokee Canal Left Bank (M13E)</td><td>5204000637</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
</table>

Preparing Contractor Name and Address	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 3, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 3, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

USACE conducted a site visit on October 2, 2012 in order to clarify comments provided by the CVFPB regarding the following points:

- USACE_CESPK_M13H_2011_p_0017: Gate is clear of debris and sediment, but is stuck open. Therefore, the rating remains red.

- USACE_CESPK_M13H_2011_p_0018: Riprap placement is not sufficient to restore the levee prism to original lines and grades. No fill material was placed within the eroded area, and large gaps remain present from the surface of the riprap to the levee. In addition, the corrugated pipe that is causing this erosion is still present and will continue to remain an issue until the pipe is removed.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

Maintenance Area 13 Unit 2 South - Cherokee Canal Left Bank Unacceptable - Inactive

	Unit 2, Cottonwood Creek left bank (M13H)	Unit 2, Cherokee Canal left bank south of Cottonwood Creek (M13F)	Unit 2 south, Cherokee Canal left bank (M13E)
General Items			
Operations and Maintenance Manuals	M	M	M
Emergency Supplies and Equipment	A	A	A
Flood Preparedness and Training	A	A	A
Levee Embankment Items			
Vegetation Growth	U	U	U
Sod Cover	U	M	A
Encroachments	U	U	U
Closure Structures	N/A	N/A	N/A
Slope Stability	M	U	U
Erosion/Bank Caving	U	U	U
Settlement	A	A	A
Depressions/Rutting	U	U	M
Cracking	A	A	M
Animal Control	U	U	U
Culverts/Discharge Pipes	N/A	N/A	N/A
Riprap Revetments & Bank Protection	U	U	U
Revetments other than Riprap	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A
Seepage	M	M	M

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

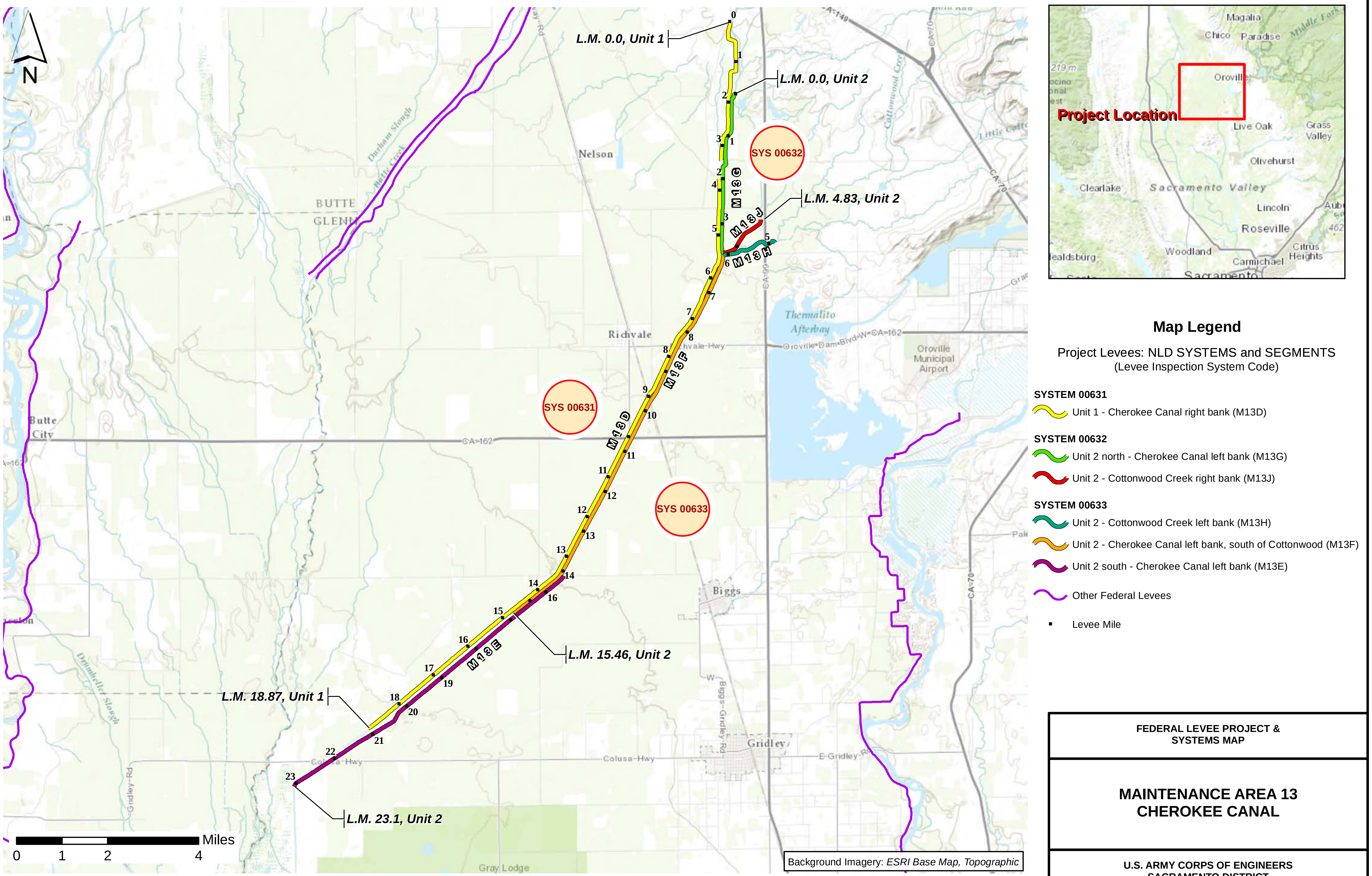
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

7/29/2011

Revised - 10/3/2012



Background Imagery: *ESRI Base Map, Topographic*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 00631

- Unit 1 - Cherokee Canal right bank (M13D)

SYSTEM 00632

- Unit 2 north - Cherokee Canal left bank (M13G)
- Unit 2 - Cottonwood Creek right bank (M13J)

SYSTEM 00633

- Unit 2 - Cottonwood Creek left bank (M13H)
- Unit 2 - Cherokee Canal left bank, south of Cottonwood (M13F)
- Unit 2 south - Cherokee Canal left bank (M13E)

- Other Federal Levees

▪ Levee Mile

FEDERAL LEVEE PROJECT &
SYSTEMS MAP

MAINTENANCE AREA 13
CHEROKEE CANAL

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 26 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area 05 Unit 1 – Butte Creek Left Bank Levee System was conducted between February 14, 2011 and March 1, 2011. The system is comprised of two segments.

System: Maintenance Area 05 Unit 1 – Butte Creek Left Bank
Segments: Unit 1, Butte Creek Left Bank – Part 1 (MA5A)
Unit 1, Butte Creek Left Bank – Part 2 (MA5B)

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, Maintenance Area 05 Unit 1 – Butte Creek Left Bank Levee System is rated unacceptable because of encroachments, erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, slope stability, depression/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system is ineligible for PL 84-99 rehabilitation assistance following a disaster. However, the system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Maintenance Area 05 Unit 1 - Butte Creek Left Bank Levee System Unacceptable - Inactive	Unit 1, Butte Creek Left Bank - Part 1 (MA5A)	Unit 1, Butte Creek Left Bank - Part 2 (MA5B)							
Operations and Maintenance Manuals	M	M							
Emergency Supplies and Equipment	A	A							
Flood Preparedness and Training	A	A							
Vegetation Growth	U	U							
Sod Cover	U	U							
Encroachments	U	U							
Closure Structures	N/A	N/A							
Slope Stability	U	U							
Erosion/Bank Caving	M	U							
Settlement	A	A							
Depressions/Rutting	U	U							
Cracking	A	A							
Animal Control	U	U							
Culverts/Discharge Pipes	N/A	N/A							
Riprap Revetments & Bank Protection	U	U							
Revetments other than Riprap	N/A	N/A							
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A							
Seepage	M	M							

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event
Serious deficiency noted in past inspections has not been corrected within the established timeframe
Not Likely to Prevent Performance In Next Flood Event

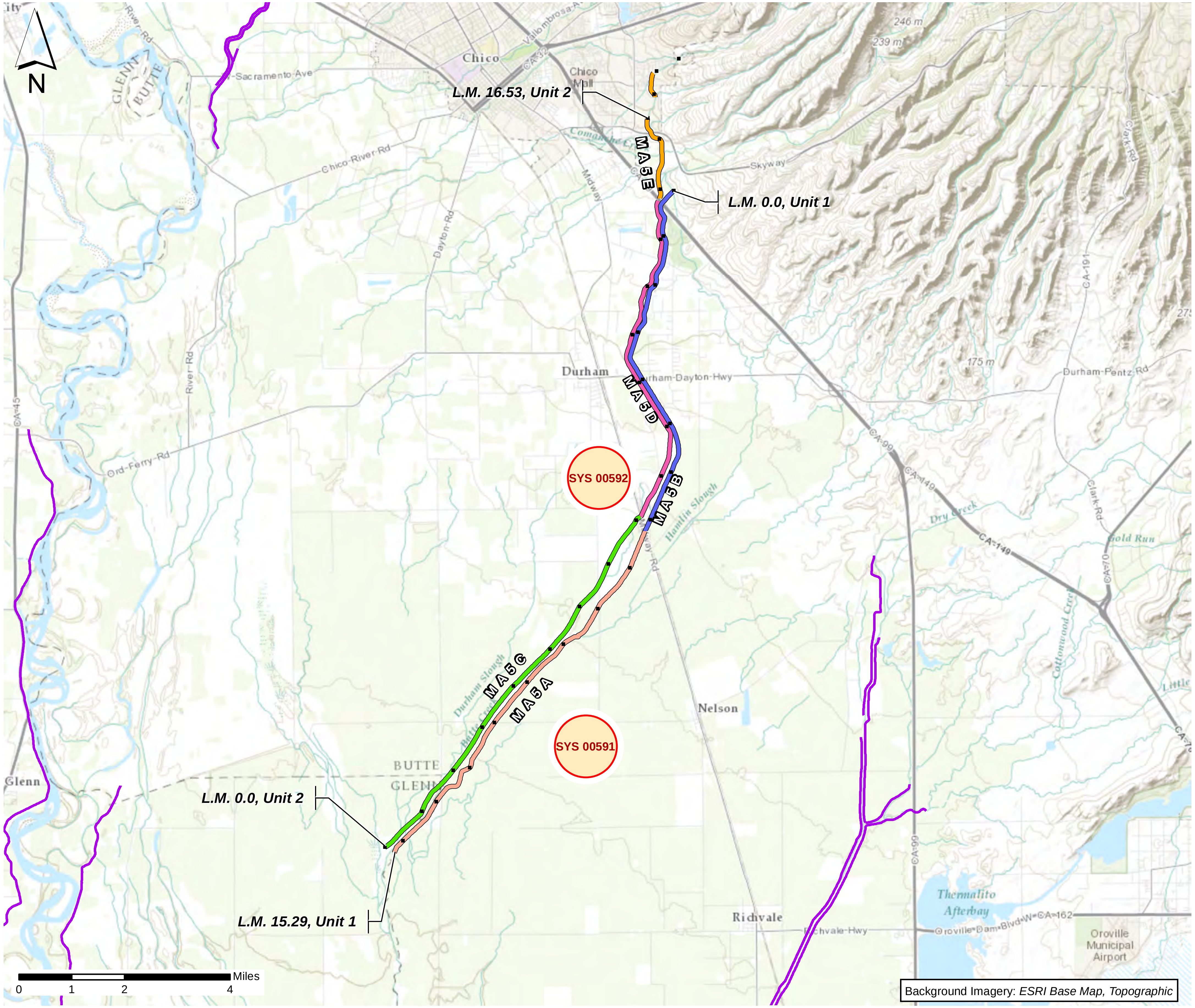
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

7/5/2011

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Rev - 8/10/2012



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 00591

- Unit 1, Butte Creek left bank - O&M Part 2 (MA5B)
- Unit 1, Butte Creek left bank - O&M Part 1 (MA5A)

SYSTEM 00592

- Unit 2 north, Little Chico-Butte Creek Diversion (MA5E)
- Unit 2, Butte Creek right bank - O&M Part 2 (MA5D)
- Unit 2, Butte Creek right bank - O&M Part 1 (MA5C)
- Other Federal Levees
- ▪ Levee Mile

FEDERAL LEVEE PROJECT & SYSTEMS MAP

MAINTENANCE AREA 5
BUTTE CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Maintenance Area 05 Unit 1 - Butte Creek Left Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Maintenance Area 05 Unit 1 - Butte Creek Left Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000591
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 1, Butte Creek Left Bank - Part 1</td><td>5204000593</td><td>U</td></tr>
<tr><td>Unit 1, Butte Creek Left Bank - Part 2</td><td>5204000591</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Contractor Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-571.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick P. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 27 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Maintenance Area 05 Unit 2 – Butte Creek Right Bank Levee System was conducted between February 14, 2011 and March 1, 2011. The system is comprised of three segments.

System: Maintenance Area 05 Unit 2 – Butte Creek Right Bank
Segments: Unit 2, Butte Creek Right Bank – Part 1 (MA5C)
Unit 2, Butte Creek Right Bank – Part 2 (MA5D)
Unit 2, North, Little Chico – Butte Creek Diversion (MA5E)

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
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U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, Maintenance Area 05 Unit 2 – Butte Creek Right Bank Levee System is rated unacceptable because of encroachments, erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, slope stability, depression/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system is ineligible for PL 84-99 rehabilitation assistance following a disaster. However, the system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

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If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Maintenance Area 05 Unit 2 - Butte Creek Right Bank Levee System Unacceptable - Inactive	Unit 2, Butte Creek Right Bank - Part 1 (MA5C)	Unit 2, Butte Creek Right Bank - Part 2 (MA5D)	Unit 2 North, Little Chico - Butte Creek Diversion (MA5E)						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	A	A	A						
Flood Preparedness and Training	A	A	A						
Vegetation Growth	U	U	U						
Sod Cover	M	M	U						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	U	M	M						
Erosion/Bank Caving	U	M	M						
Settlement	A	A	A						
Depressions/Rutting	U	U	U						
Cracking	A	A	M						
Animal Control	U	U	U						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	N/A	U	U						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	M	M	M						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

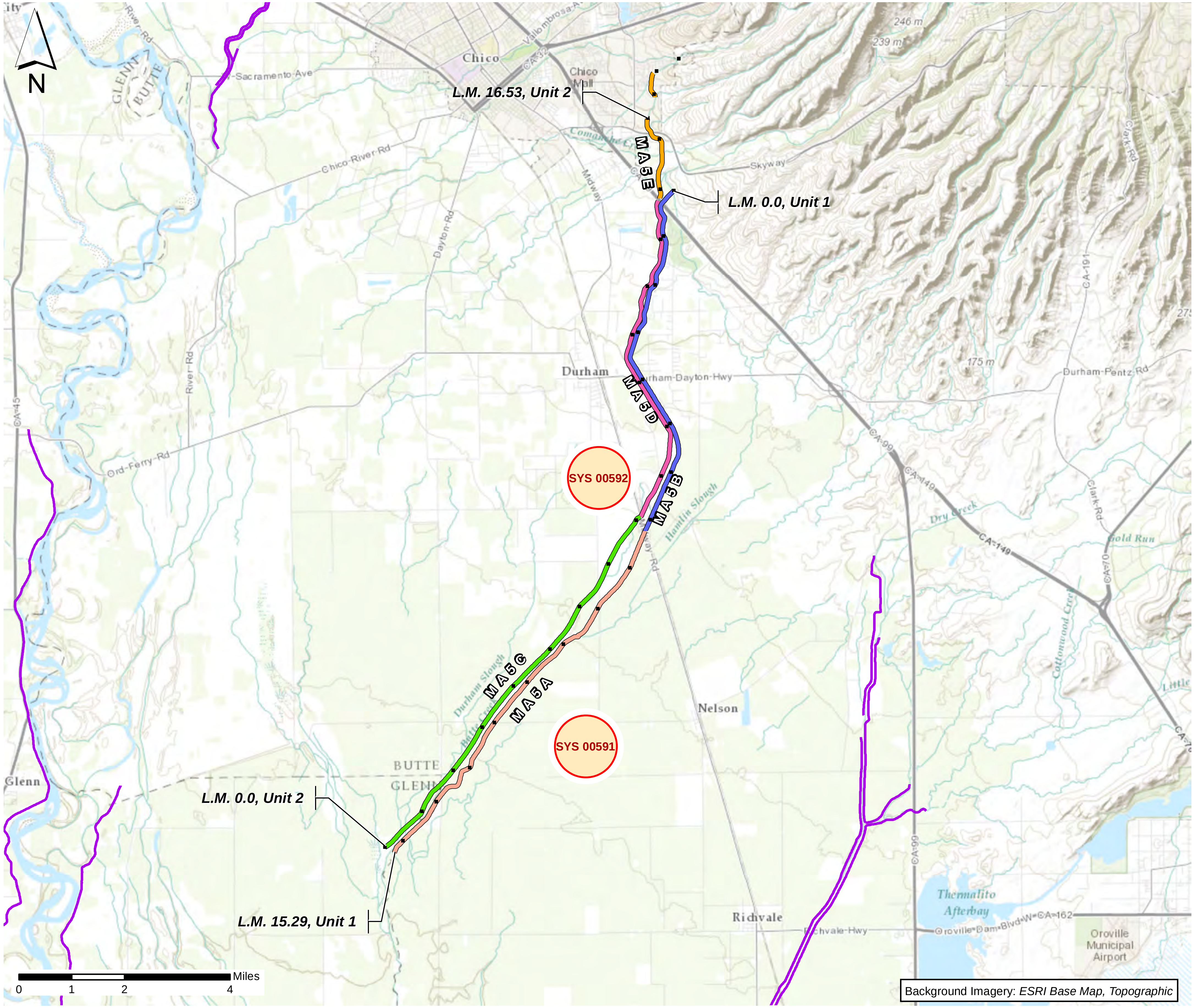
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

7/5/2011

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Rev - 8/10/2012



Background Imagery: *ESRI Base Map, Topographic*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 00591

- Unit 1, Butte Creek left bank - O&M Part 2 (MA5B)
- Unit 1, Butte Creek left bank - O&M Part 1 (MA5A)

SYSTEM 00592

- Unit 2 north, Little Chico-Butte Creek Diversion (MA5E)
- Unit 2, Butte Creek right bank - O&M Part 2 (MA5D)
- Unit 2, Butte Creek right bank - O&M Part 1 (MA5C)
- Other Federal Levees
- ▪ Levee Mile

FEDERAL LEVEE PROJECT & SYSTEMS MAP

MAINTENANCE AREA 5
BUTTE CREEK

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Maintenance Area 05 Unit 2 - Butte Creek Right Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation’s flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Maintenance Area 05 Unit 2 - Butte Creek Right Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000592
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Unit 2, Butte Creek Right Bank - Part 1</td><td>5204000594</td><td>U</td></tr>
<tr><td>Unit 2, Butte Creek Right Bank - Part 2</td><td>5204000592</td><td>U</td></tr>
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<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>USACE Assigned PL 84-99 Rehabilitation Status</td><td>Assigned Status: Inactive</td></tr>
<tr><td>Preparing Contractor Name and Address</td><td>URS</td></tr>
</table>

	2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 2, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 2, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-571.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick P. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 10 2011

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

In accordance with the request from the Central Valley Flood Protection Board, dated December 17, 2010, The U.S. Army Corps of Engineers (USACE) conducted a re-inspection of some unacceptable deficiencies identified during the City of Marysville - Units 1, 2, and 3 Periodic Inspection. On February 9, 2011, Ryan Larson, Jesse Hogan, Mary Perlea, and Erik James of USACE staff, Curt Taras and Allison Tang of the Central Valley Flood Protection Board staff, Clay Thomas of the Department of Water Resources, and Frank Miller of the Marysville Levee Commission attended the reinspection. The system is comprised of three segments. All re-inspection items were along Unit 1, Jack Slough. A revised Report Card and photos of the before and after condition are enclosed and serve as a summary of the findings.

System: City of Marysville - Units 1, 2, and 3 system
Segments: City of Marysville - Unit 1, Jack Slough
City of Marysville - Unit 2, Feather River
City of Marysville - Unit 3, Yuba River

The system rating is based solely on the USACE inspection checklist. The cracking and depressions and rutting issues identified during the periodic inspection have been repaired to an acceptable condition. The repair of the slope stability issue is considered an interim solution and will need to be closely monitored over time. Any movement of the slope in this area should trigger an action to further stabilize the slope. The site must be permanently repaired within two years of the date of this letter. Based on observations made as part of the re-inspection, the City of Marysville - Units 1, 2, and 3 system is rated minimally acceptable because of unwanted vegetation growth, encroachments, and slope stability (shown in purple and yellow on the enclosed Report Card). An engineering determination, based upon visual inspection, concluded that these issues would <u>not</u> prevent the system from performing as intended during the next flood event. The City of Marysville - Units 1, 2, and 3 system is active for PL 84-99 rehabilitation assistance effective December 17, 2010.

The USACE appreciates the actions of the Local Maintaining Agency to quickly make the necessary repairs to the system. These maintenance activities have improved the overall condition of the system. We urge your Board and the Local Maintaining Agency to continue this level of maintenance and build upon these good practices.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board (CVFPB), 2) the Corps had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman Walter Herger's office as required by our regulations.

Sincerely,

Andrew B. Kiger, P.E.
Lieutenant Colonel, U.S. Army
District Commander

Enclosures

MRY1_2010_a_0009-Condition during PI, January 2010

MRY1_2010_a_0009-Condition during the reinspection, February 2011

MRY1_2010_a_0009-Condition during PI, January 2010

MRY1_2010_a_0009-Condition during the reinspection, February 2011

The area noted as slope stability was an area of surface erosion caused by the removal of a dike that had previously directed flows to a controlled location. This drainage feature was removed during road repairs in 2009. The LMA temporarily repaired the issue in February 2010 and subsequently permanently repaired the eroded levee surface in August 2010.

MRY1_2010_a_0036-Condition during PI, January 2010

MRY1_2010_a_0036-Condition during the reinspection, February 2011
All areas of depressions and rutting have been backfilled and compacted as a part of the LMA's regular annual inspection and maintenance program.

There were several areas of cracking along the paved levee patrol road. Several of these cracks have grown over time to several inches wide, but few had encroached into the levee section. The

LMA has repaired these sites by removing the asphalt, placing and compacting fill, and replacing the asphalt. A majority of the patrol road will be replaced as part of the Marysville Ring Levee Project now in construction by the USACE and expected to be completed in 2013.

City of Marysville - Units 1, 2, 3 Minimally Acceptable-Active	Unit 1 Jack Slough	Unit 2 Feather River	Unit 3 Yuba River						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	A	A	A						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	A	A	A						
Encroachments	U	U	U						
Closure Structures	A	A	A						
Slope Stability	U	A	M						
Erosion/Bank Caving	M	M	M						
Settlement	A	A	A						
Depressions/Rutting	A	A	A						
Cracking	A	A	A						
Animal Control	M	M	M						
Culverts/Discharge Pipes	NA	NA	NA						
Riprap Revetments & Bank Protection	NA	NA	M						
Revetments other than Riprap	NA	NA	NA						
Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

February 9, 2011

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 22 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Mellin Levee – Rio Vista Levee System on August 27, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Encroachments, vegetation growth, and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable encroachment observations identified in our May 17, 2013, inspection report for the same levee segment that have not been corrected; therefore, the encroachment item rating remains unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended and are being reported to your board for the first time, are shown in yellow on the Report Card. Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Mellin Levee – Rio Vista Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue.

Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

M J Farrell

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Mellin Levee - Rio Vista System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	Mellin Levee (MELN)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	A							
	Settlement	M							
	Depressions/Rutting	A							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable	🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
M	Minimally Acceptable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Unacceptable		
N/A	Not Applicable	🟥 U	Likely prevents performance in next flood event

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JAN 20 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek left bank – Unit 1 South Levee System on January 13-15, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek left bank – Unit 1 South Levee System is rated Unacceptable. The unacceptable rating is due to slope stability, erosion/bank caving, animal control, and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Encroachments, culverts/discharge pipes, vegetation growth, settlement, depressions/rutting, cracking, and plant building observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek left bank – Unit 1 South Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek left bank - Unit 1 south Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek Unit 1, Left Bank below Clover Creek (MC01)	Middle Creek - Lake County - Unit 1, left bank below Clover Creek (MC1C)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M	M						
	Closure Structures	NA	NA						
	Slope Stability	A	U						
	Erosion/Bank Caving	A	U						
	Animal Control	U	M						
	Culverts/Discharge Pipes	NA	M						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	A	A						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	A	M						
	Riprap Revetments & Bank Protection	NA	NA						
	Revetments other than Riprap	NA	NA						
	Seepage	A	U						
Pump Stations	Pump Stations Operating, Maintenance, Training, & Inspection Records		M						
	Pump Station Operations and Maintenance Equipment Manuals		M						
	Safety Compliance		M						
	Communications (A or M only)		A						
	Plant Building		M						
	Fencing and Gates		A						
	Pumps		M						
	Motors, Engines, Fans, Gear Reducers, Back Stop Devices, etc.		M						
	Sumps/ Wet well		A						
	Mechanical Operating Trash Rakes		NA						
	Non-Mechanical Trash Racks		A						
	Fuel System for Pump Engines		NA						
	Power Source		M						
	Electrical Systems		M						
	Megger Testing on Pump Motors and Critical Power Cables		M						
	Enclosures, Panels, Conduit and Ducts		M						
	Intake and Discharge Pipelines		M						
	Sluice/ Slide Gates		M						
	Flap Gates/ Flap Valves/ Pinch Valves		M						
	Cranes		NA						
	Other Metallic Items (Equipment, Ladders, Platform Anchors, etc)		M						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE · UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JAN 20 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek right bank – Unit 2 Levee System on January 8-10, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek right bank – Unit 2 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, depressions/rutting, and cracking observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek right bank – Unit 2 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek right bank - Unit 2 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek - Lake County - Unit 3, Scotts Creek left bank (MC03)	Middle Creek - Lake County - Unit 2, right bank above Scotts Creek (MC2B)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	M	A						
	Erosion/Bank Caving	M	A						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	A						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	A	M						
	Riprap Revetments & Bank Protection	NA	NA						
	Revetments other than Riprap	NA	M						
	Seepage	A	A						

Legend

A Acceptable
M Minimally Acceptable
U Unacceptable
N/A Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JAN 20 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek left bank – Unit 1 at Clear Lake Levee System on January 15-16, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek left bank – Unit 1 at Clear Lake Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, depressions/rutting, and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Animal control, vegetation growth, and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek left bank – Unit 1 at Clear Lake Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety

issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek left bank - Unit 1 at Clear Lake Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek - Lake County - Unit 1, left bank at Clear Lake confluence (MC1D)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	U							
	Erosion/Bank Caving	U							
	Animal Control	M							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	U							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	U							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JAN 2 0 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek left bank – Unit 1 North Levee System on January 10, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek left bank – Unit 1 North Levee System is rated Unacceptable. The unacceptable rating is due to encroachments (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that this issue is likely to prevent the system from performing as intended during the next flood event. This issue should be addressed immediately.

Erosion/bank caving, animal control, vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek left bank – Unit 1 North Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek left bank - Unit 1 north Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek - Lake County - Unit 4, Alley Creek right bank (MC04)	Middle Creek - Lake County - Unit 1 north, left bank (MC1A)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	A	A						
	Erosion/Bank Caving	A	M						
	Animal Control	M	M						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	NA	NA						
	Revetments other than Riprap	NA	NA						
	Seepage	A	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JAN 2 0 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek right bank – Unit 2 North Levee System on January 7-8, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek right bank – Unit 2 North Levee System is rated Unacceptable. The unacceptable rating is due to encroachments (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that this issue is likely to prevent the system from performing as intended during the next flood event. This issue should be addressed immediately.

Animal control, vegetation growth, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek right bank – Unit 2 North Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek right bank - Unit 2 north Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek - Lake County - Unit 2 north, right bank (MC2A)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	🟨 M							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	🟨 M							
	Sod Cover	A							
	Settlement	M							
	Depressions/Rutting	🟨 M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JAN 20 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Middle Creek left bank – Unit 5 and part of 1 Levee System on January 11-13, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the Middle Creek left bank – Unit 5 and part of 1 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that this issue is likely to prevent the system from performing as intended during the next flood event. This issue should be addressed immediately.

Closure structures, animal control, culverts/discharge pipes, vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Middle Creek left bank – Unit 5 and part of 1 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Lake County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Middle Creek left bank - Unit 5 and part of 1 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Middle Creek - Lake County - Unit 5, Alley Creek left bank (MC05)	Middle Creek - Lake County - Unit 1, left bank above Clover Creek (MC1B)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	M						
	Slope Stability	A	A						
	Erosion/Bank Caving	A	A						
	Animal Control	M	M						
	Culverts/Discharge Pipes	M	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	NA	NA						
	Revetments other than Riprap	NA	M						
	Seepage	A	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Mormon Slough - Calaveras, Diverting Canal left bank system was conducted between June 21, 2010 and July 29, 2010. The system is comprised of four segments.

System: Mormon Slough - Calaveras, Diverting Canal left bank
Segments: Mormon Slough - Unit 16 west, Calaveras River left bank
Mormon Slough - Unit 16, Stockton Diverting Canal left bank
Mormon Slough - Unit 16, Mormon Slough left bank above Stockton Diverting Canal
Mormon Slough - Unit 18, Potter Creek left bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines

The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.

Based on observations made as part of the inspection, the Mormon Slough - Calaveras, Diverting Canal left bank system is rated unacceptable because of unwanted vegetation growth, encroachments, and erosion/bank caving (shown in orange and pink on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. The unwanted vegetation growth and encroachments along the left bank of the Calaveras River were noted during a previous inspection and corrections were not made in the established timeframe. The vegetation items along the left bank of the Calaveras River should be corrected immediately to at least the Interim Vegetation Criteria described in California's Central Valley Flood System Improvement Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. The encroachments along the left bank of the Calaveras River should be corrected immediately. In order to receive at least a minimally acceptable rating for encroachments along the left bank of the Calaveras River, all structural encroachments must be corrected and at least 50 percent of the remaining encroachments must be removed or properly reviewed and permitted. The encroachments in the other segments and the erosion/bank caving issues should be corrected in accordance with the Framework. The Mormon Slough - Calaveras, Diverting Canal left bank system remains inactive for PL 84-99 rehabilitation assistance.

Sod cover, depressions/rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). Maintenance of the yellow and purple items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson at the time of a re-inspection request for this system. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card).

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. The system remains ineligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition and meet the requirements of California's Central Valley Flood System Improvement Framework before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's and Dennis Cardoza's offices as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

System 3 Mormon Slough - Calaveras, Diverting Canal Left Bank Unacceptable - Inactive	Unit 16 West, Calaveras River Left Bank (MSL6)	Unit 16, Stockton Diverting Canal Left Bank (MSL7)	Unit 16, Mormon Slough Left Bank Above Stockton Diverting Canal (MSL8)	Unit 18, Potter Creek Left Bank (MSLP)					
Operations and Maintenance Manuals	M	M	M	M					
Emergency Supplies and Equipment	M	M	M	M					
Flood Preparedness and Training	M	M	M	M					
Unwanted Vegetation Growth	U	U	U	U					
Sod Cover	U	U	M	M					
Encroachments	U	U	U	U					
Closure Structures	N/A	N/A	N/A	N/A					
Slope Stability	M	A	A	A					
Erosion/Bank Caving	U	A	A	A					
Settlement	A	A	A	A					
Depressions/Rutting	U	U	M	M					
Cracking	M	U	U	M					
Animal Control	U	U	M	M					
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A					
Riprap Revetments & Bank Protection	A	U	U	N/A					
Revetments other than Riprap	N/A	N/A	N/A	N/A					
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A					
Seepage	A	A	A	A					

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

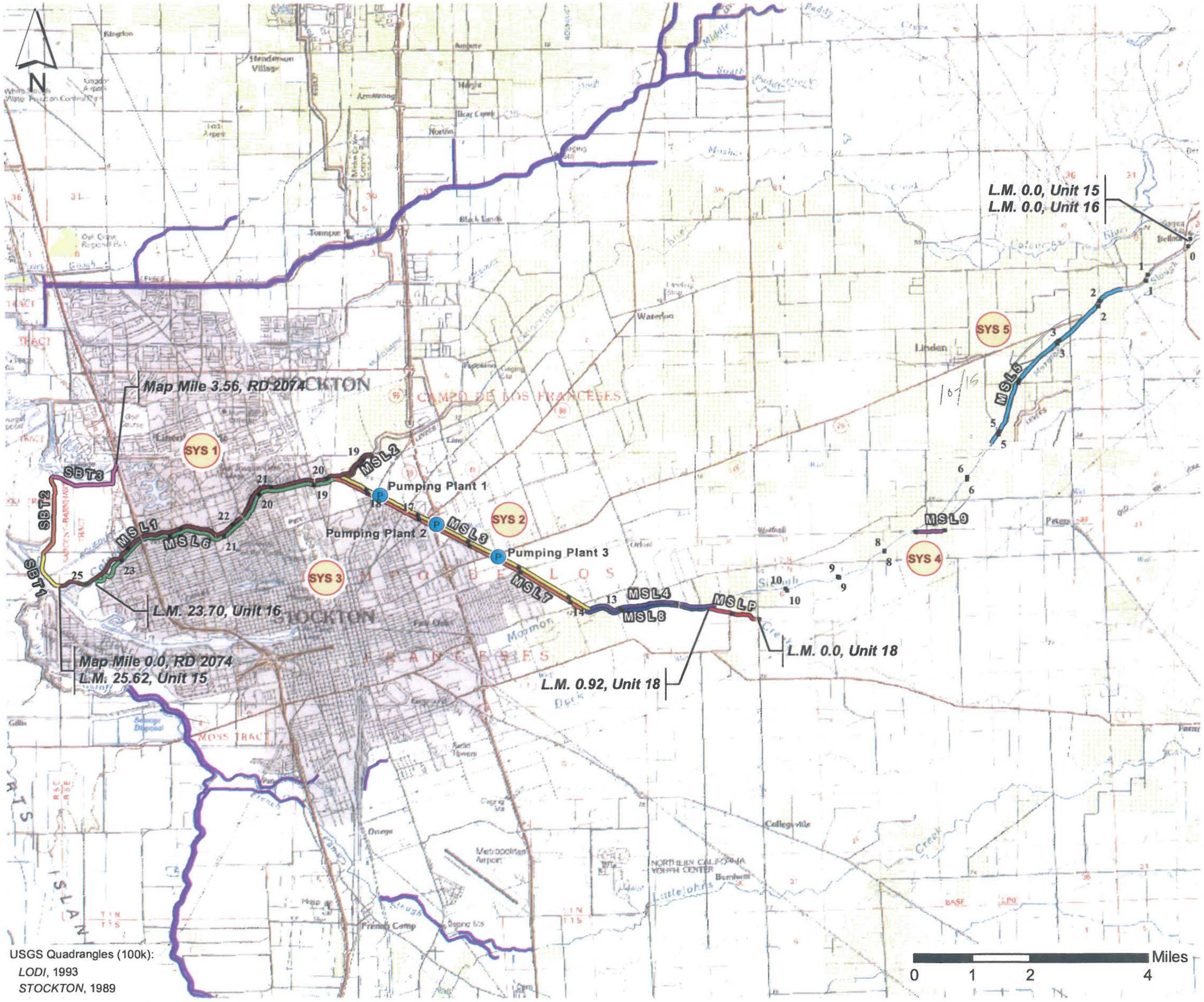
Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

August 4, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1:
- Unit 15, Calaveras River right bank (MSL1)
- RD 2074, Unit 1 <Non-Federal> (SBT1)
- RD 2074, Unit 2 <Non-Federal> (SBT2)
- RD 2074, Unit 3 <Non-Federal> (SBT3)

SYSTEM 2:
- Unit 15, Calaveras River left bank above Canal (MSL2)
- Unit 15, Stockton Diverting Canal right bank (MSL3)
- Unit 15, Mormon Slough right bank above Canal (MSL4)

SYSTEM 3:
- Unit 16, Calaveras River left bank below Canal (MSL6)
- Unit 16, Stockton Diverting Canal (MSL7)
- Unit 16, Mormon Slough left bank above Canal (MSL8)
- Unit 18, Potter Creek left bank (MSLP)

SYSTEM 4:
- Unit 16 east, left bank at RR tracks (MSL9)

SYSTEM 5:
- Unit 15 east, Mormon Slough right bank (MSL5)

- Federal Levee
- Ⓟ Pump Station
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

MORMON SLOUGH
AND RD 2074

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Mormon Slough - Calaveras R right bank - RD 2074 system was conducted between June 21, 2010 and July 30, 2010. The system is comprised of four segments.

System: Mormon Slough - Calaveras R right bank - RD 2074
Segments: Mormon Slough - Unit 15 west, Calaveras River right bank
RD 2074 - Sargent-Barnhardt Tract - Unit 1, Stockton Deep Water Channel
RD 2074 - Sargent-Barnhardt Tract - Unit 2, Ten Mile Slough
RD 2074 - Sargent-Barnhardt Tract - Unit 3, Fourteen Mile Slough

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs.

inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Mormon Slough - Calaveras R right bank - RD 2074 system is rated unacceptable because of encroachments and erosion/bank caving (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Mormon Slough - Calaveras R right bank - RD 2074 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, depressions and rutting, cracking, animal control, and riprap revetments were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, depressions and rutting, cracking, animal control and riprap revetments must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Mormon Slough - Calaveras R right bank - RD 2074 system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, Reclamation District 2074, the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressmen Jerry McNerney's and Dennis Cardoza's offices as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 1 Mormon Slough - Calaveras River Right Bank - RD 2074 Unacceptable - Active	Unit 15 West, Calaveras River Right Bank (MSL1)	RD 2074 - Sargent-Barnhardt Tract - Unit 1, Stockton Deep Water Channel (SBT1)	RD 2074 - Sargent-Barnhardt Tract - Unit 2, Tenmile Slough (SBT2)	RD 2074 - Sargent-Barnhardt Tract - Unit 3, Fourmile Slough (SBT3)					
Operations and Maintenance Manuals	M	M	M	M					
Emergency Supplies and Equipment	M	M	M	M					
Flood Preparedness and Training	M	M	M	M					
Unwanted Vegetation Growth	U	U	U	U					
Sod Cover	U	U	U	U					
Encroachments	U	U	U	U					
Closure Structures	N/A	N/A	N/A	N/A					
Slope Stability	M	A	A	A					
Erosion/Bank Caving	U	A	A	A					
Settlement	M	A	A	A					
Depressions/Rutting	U	M	M	A					
Cracking	U	A	M	M					
Animal Control	U	U	M	M					
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A					
Riprap Revetments & Bank Protection	U	N/A	N/A	N/A					
Revetments other than Riprap	N/A	N/A	N/A	N/A					
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A					
Seepage	A	A	A	A					

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

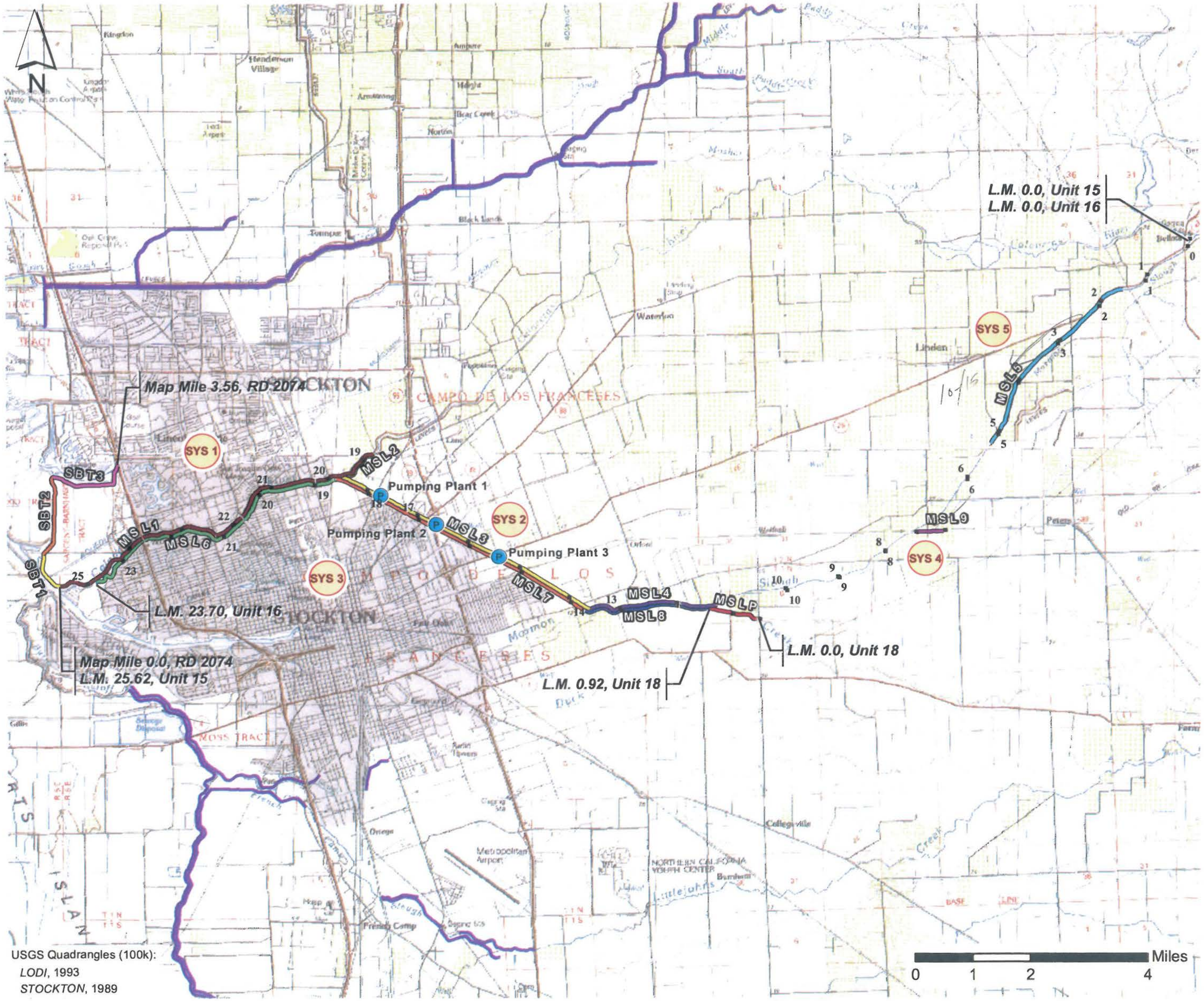
Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

August 4, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1:
- Unit 15, Calaveras River right bank (MSL1)
- RD 2074, Unit 1 <Non-Federal> (SBT1)
- RD 2074, Unit 2 <Non-Federal> (SBT2)
- RD 2074, Unit 3 <Non-Federal> (SBT3)

SYSTEM 2:
- Unit 15, Calaveras River left bank above Canal (MSL2)
- Unit 15, Stockton Diverting Canal right bank (MSL3)
- Unit 15, Mormon Slough right bank above Canal (MSL4)

SYSTEM 3:
- Unit 16, Calaveras River left bank below Canal (MSL6)
- Unit 16, Stockton Diverting Canal (MSL7)
- Unit 16, Mormon Slough left bank above Canal (MSL8)
- Unit 18, Potter Creek left bank (MSLP)

SYSTEM 4:
- Unit 16 east, left bank at RR tracks (MSL9)

SYSTEM 5:
- Unit 15 east, Mormon Slough right bank (MSL5)

- Federal Levee
- Ⓟ Pump Station
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

MORMON SLOUGH
AND RD 2074

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

APR 17 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Mormon Slough - Diverting Canal right bank system was conducted between June 25, 2010 and June 27, 2010. The system is comprised of three segments.

System: Mormon Slough - Diverting Canal right bank	
Segments:	Mormon Slough - Unit 15, Calaveras River left bank above Stockton Diverting Canal
	Mormon Slough - Unit 15, Stockton Diverting Canal right bank
	Mormon Slough - Unit 15, Mormon Slough right bank above Stockton Diverting Canal

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
U	Not likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Mormon Slough - Diverting Canal right bank system is rated unacceptable because of encroachments (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that this issue could prevent the system from performing as intended during the next flood event. Encroachments should be addressed in accordance with the Framework. Because of the Framework, the Mormon Slough - Diverting Canal right bank system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, erosion, depressions and rutting, animal control, culverts/discharge pipes, riprap revetments and pump station deficiencies were determined to be unacceptable but an engineering determination concluded they would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow and purple on the report card). Vegetation and erosion maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the sod cover, depressions and rutting, animal control, culverts/discharge pipes, riprap revetments, and pump station must be completed within 2 years of the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Mormon Slough - Diverting Canal right bank system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items between the date of inspection and the release of this report. These maintenance activities have improved the overall condition of the system and effort was reflected in the final results. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the San Joaquin Area Flood Control Agency, Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

System 2 Mormon Slough - Diverting Canal Right Bank Unacceptable - Active	Unit 15, Calaveras River Left Bank Above Stockton Diverting Canal (MSL2)	Unit 15, Stockton Diverting Canal Right Bank (MSL3)	Unit 15, Mormon Slough Right Bank Above Stockton Diverting Canal (MSL4)						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	M	M	M						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	M	U	U						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	A	M	M						
Erosion/Bank Caving	U	A	A						
Settlement	A	A	A						
Depressions/Rutting	U	U	M						
Cracking	A	M	A						
Animal Control	U	U	U						
Culverts/Discharge Pipes	N/A	U	N/A						
Riprap Revetments & Bank Protection	N/A	U	U						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	A	A						
Pumpstation	N/A	U	N/A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

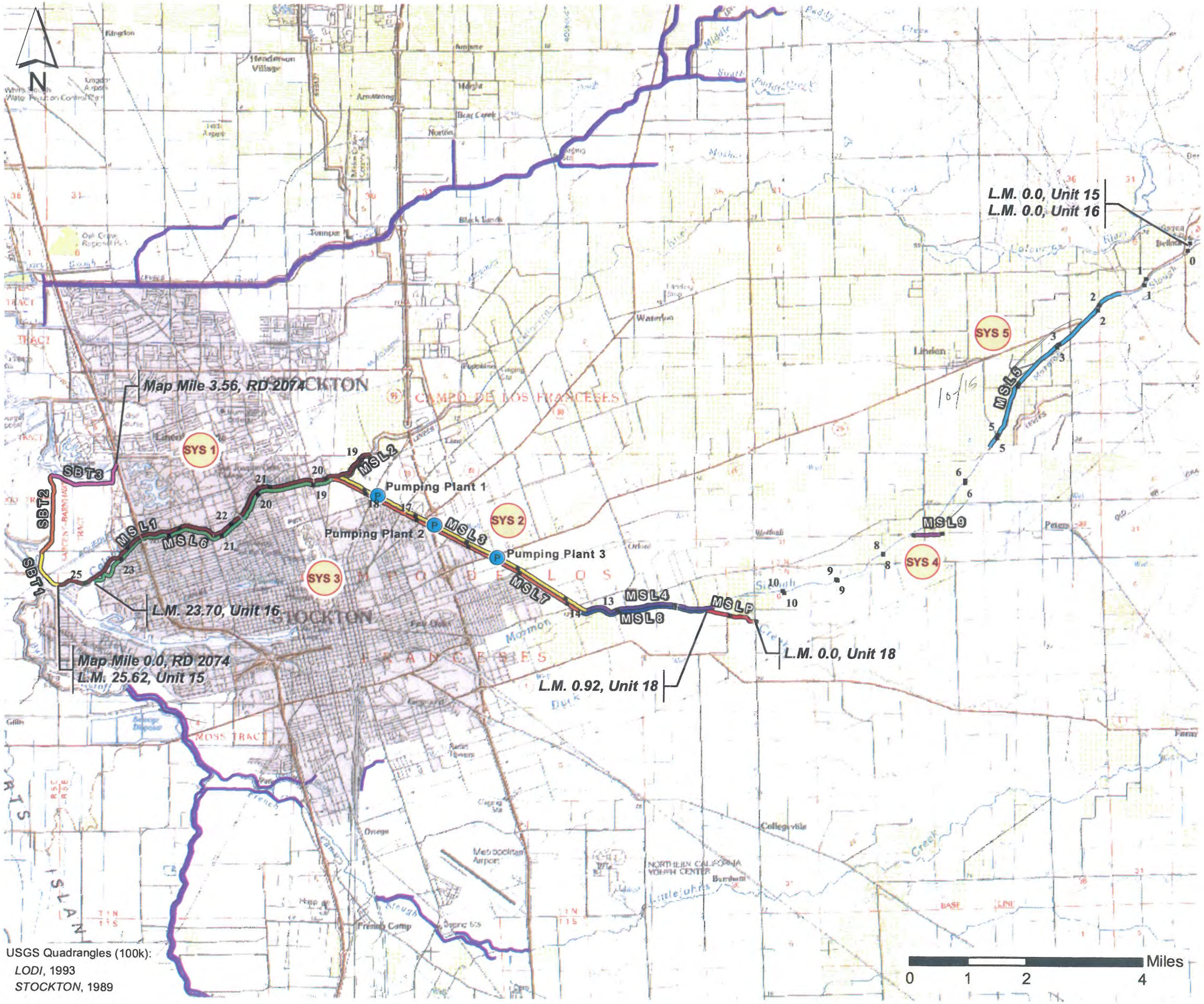
Not Likely to Prevent Performance In Next Flood Event (Framework)

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

August 4, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1:
- Unit 15, Calaveras River right bank (MSL1)
- RD 2074, Unit 1 <Non-Federal> (SBT1)
- RD 2074, Unit 2 <Non-Federal> (SBT2)
- RD 2074, Unit 3 <Non-Federal> (SBT3)

SYSTEM 2:
- Unit 15, Calaveras River left bank above Canal (MSL2)
- Unit 15, Stockton Diverting Canal right bank (MSL3)
- Unit 15, Mormon Slough right bank above Canal (MSL4)

SYSTEM 3:
- Unit 16, Calaveras River left bank below Canal (MSL6)
- Unit 16, Stockton Diverting Canal (MSL7)
- Unit 16, Mormon Slough left bank above Canal (MSL8)
- Unit 18, Potter Creek left bank (MSLP)

SYSTEM 4:
- Unit 16 east, left bank at RR tracks (MSL9)

SYSTEM 5:
- Unit 15 east, Mormon Slough right bank (MSL5)

- Federal Levee
- P Pump Station
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

MORMON SLOUGH AND RD 2074

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Mormon Slough - Left Bank Along RR Tracks - Unit 16 system was conducted on August 10, 2010. The system is comprised of one segment.

System: Mormon Slough - Left Bank Along RR Tracks - Unit 16
Segment: Unit 16 East, Left Bank at RR Tracks

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

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U	Likely to prevent the system from performing as intended during the next flood event	Active (Framework)	Fix in accordance with Framework timelines.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
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The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Mormon Slough - Left Bank Along RR Tracks - Unit 16 system is rated unacceptable because of encroachments (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that the encroachments could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. Because of the Framework, the Mormon Slough - Left Bank Along RR Tracks - Unit 16 system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, depressions/rutting, and cracking were determined to be unacceptable but an engineering determination concluded it would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the Report Card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the Mormon Slough - Left Bank Along RR Tracks - Unit 16 system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

System 4 Mormon Slough - Left Bank Along RR Tracks - Unit 16 Unacceptable - Active	Unit 16 East, Left Bank at RR Tracks (MSL9)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	M								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	M								
Erosion/Bank Caving	A								
Settlement	A								
Depressions/Rutting	U								
Cracking	U								
Animal Control	M								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	N/A								
Revetments other than Riprap	N/A								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

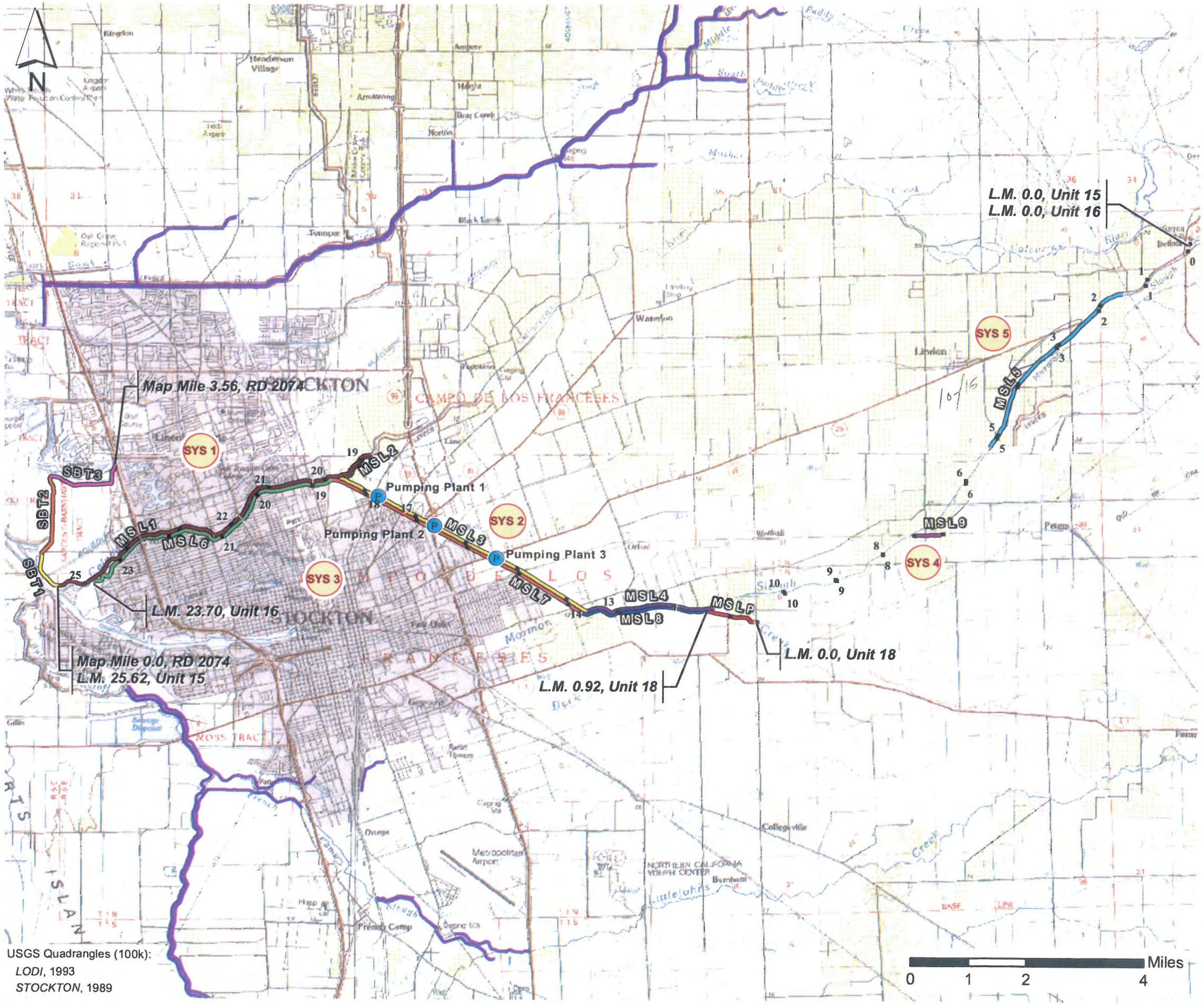
Not Likely to Prevent Performance In Next Flood Event (Framework)

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

August 4, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1:
- ▬ Unit 15, Calaveras River right bank (MSL1)
- ▬ RD 2074, Unit 1 <Non-Federal> (SBT1)
- ▬ RD 2074, Unit 2 <Non-Federal> (SBT2)
- ▬ RD 2074, Unit 3 <Non-Federal> (SBT3)

SYSTEM 2:
- ▬ Unit 15, Calaveras River left bank above Canal (MSL2)
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- ▬ Unit 15, Mormon Slough right bank above Canal (MSL4)

SYSTEM 3:
- ▬ Unit 16, Calaveras River left bank below Canal (MSL6)
- ▬ Unit 16, Stockton Diverting Canal (MSL7)
- ▬ Unit 16, Mormon Slough left bank above Canal (MSL8)
- ▬ Unit 18, Potter Creek left bank (MSLP)

SYSTEM 4:
- ▬ Unit 16 east, left bank at RR tracks (MSL9)

SYSTEM 5:
- ▬ Unit 15 east, Mormon Slough right bank (MSL5)

- ▬ Federal Levee
- P Pump Station
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

MORMON SLOUGH
AND RD 2074

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

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A Periodic Inspection for the Mormon Slough Right Bank - Unit 15 east system was conducted August 2-3, 2010. The system is comprised of one segment.

System: Mormon Slough right bank - Unit 15 east
Segment: Unit 15 East, Right Bank

The system rating is determined based solely on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. However, due to the California's Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

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The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, the Mormon Slough right bank - Unit 15 east, system is rated unacceptable because of encroachment issues (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that the encroachments could prevent the system from performing as intended during the next flood event. The encroachment items should be addressed in accordance with the Framework. Because of the Framework, the Mormon Slough Right Bank - Unit 15 east system will remain active for PL 84-99 rehabilitation assistance.

Unwanted vegetation growth, sod cover, slope stability, cracking, animal control, and revetments other than riprap were determined to be unacceptable but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow and purple on the Report Card). Vegetation maintenance should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board (CVFPB) is responsible for addressing "encroachments affecting flood fighting activities or levee integrity" and "critical erosion issues." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the timeframes specified in the corrective action plan or no corrective action plan is submitted, the Mormon Slough Right Bank - Unit 15 east system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

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Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

System 5 Mormon Slough - Right Bank - Unit 15 East Unacceptable -Active	Unit 15 East, Right Bank (MSL5)								
Operations and Maintenance Manuals	M								
Emergency Supplies and Equipment	M								
Flood Preparedness and Training	M								
Unwanted Vegetation Growth	U								
Sod Cover	U								
Encroachments	U								
Closure Structures	N/A								
Slope Stability	U								
Erosion/Bank Caving	A								
Settlement	A								
Depressions/Rutting	M								
Cracking	U								
Animal Control	U								
Culverts/Discharge Pipes	N/A								
Riprap Revetments & Bank Protection	N/A								
Revetments other than Riprap	U								
Underseepage Relief Wells/Toe Drainage Systems	N/A								
Seepage	A								

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
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N/A	Not Applicable

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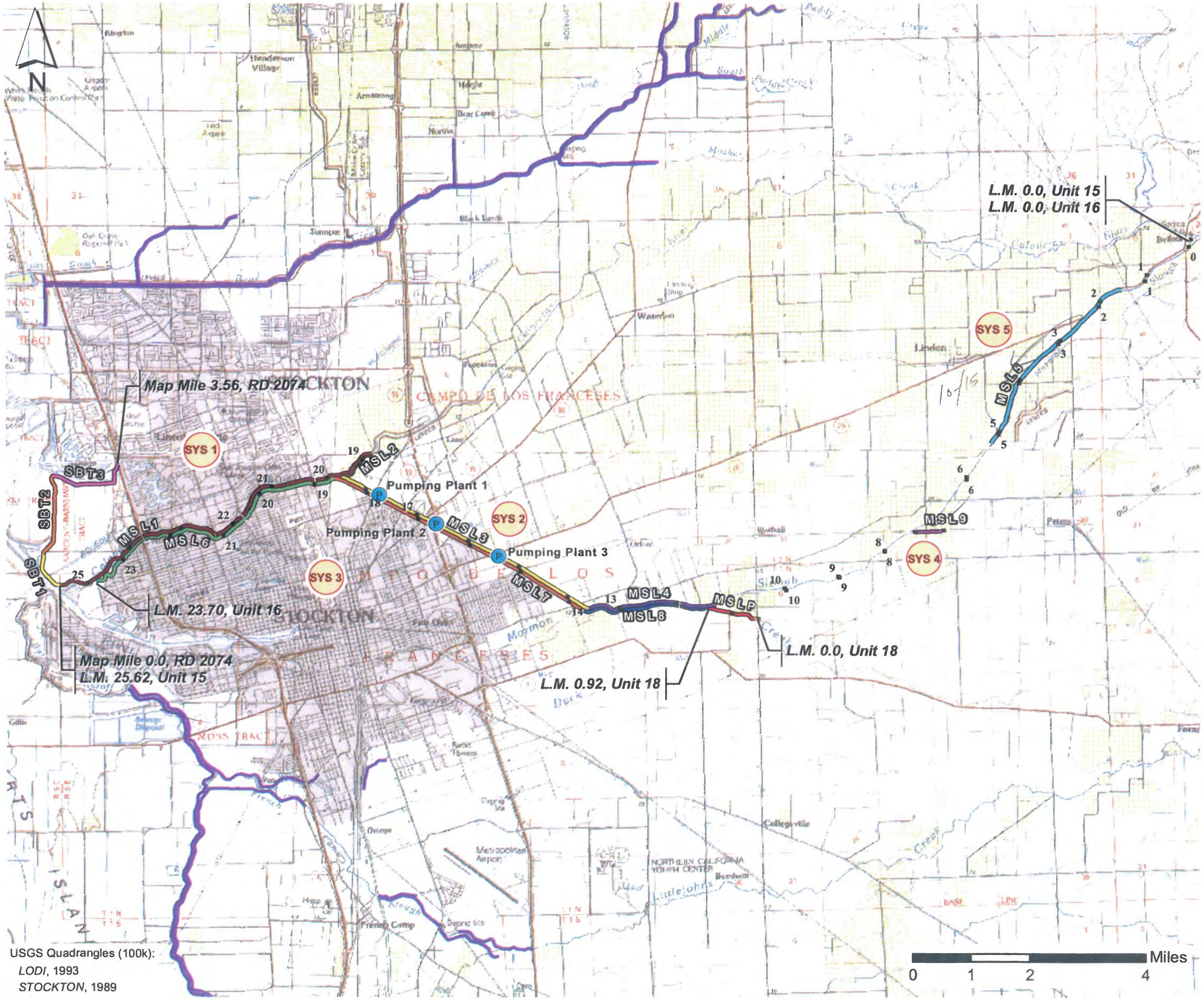
November 3, 2011



USGS Quadrangles (100k):
LODI, 1993
STOCKTON, 1989

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(LIS Code and Segment Length Miles)

SYSTEM 1:
- Unit 15, Calaveras River right bank (MSL1)
- RD 2074, Unit 1 <Non-Federal> (SBT1)
- RD 2074, Unit 2 <Non-Federal> (SBT2)
- RD 2074, Unit 3 <Non-Federal> (SBT3)

SYSTEM 2:
- Unit 15, Calaveras River left bank above Canal (MSL2)
- Unit 15, Stockton Diverting Canal right bank (MSL3)
- Unit 15, Mormon Slough right bank above Canal (MSL4)

SYSTEM 3:
- Unit 16, Calaveras River left bank below Canal (MSL6)
- Unit 16, Stockton Diverting Canal (MSL7)
- Unit 16, Mormon Slough left bank above Canal (MSL8)
- Unit 18, Potter Creek left bank (MSLP)

SYSTEM 4:
- Unit 16 east, left bank at RR tracks (MSL9)

SYSTEM 5:
- Unit 15 east, Mormon Slough right bank (MSL5)

- Federal Levee
- Ⓟ Pump Station
- ▪ Levee Mile

**FEDERAL LEVEE PROJECTS
SYSTEMS MAP**

MORMON SLOUGH
AND RD 2074

**U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT**

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

AUG 26 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the North Fork Feather River at Chester – East Levee System on October 28, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the North Fork Feather River at Chester – East Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and slope stability (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our September 12, 2011, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to the board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the North Fork Feather River at Chester – East Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor

presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Plumas County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Doug Lamalfa's office as required by our regulations.

Sincerely,

FR Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: North Fork Feather River at Chester - east levee System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	North Fork Feather River at Chester - east levee (FRC2)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	U							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	M							
	Settlement	A							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	A							
	Revetments other than Riprap	NA							
	Seepage	M							
Flood Damage Reduction Channels	Vegetation and Obstructions	A							
	Shoaling	A							
	Encroachments	A							
	Erosion	A							
	Concrete Surfaces	A							
	Tilting, Sliding, or Settlement of Concrete	NA							
	Foundation of Concrete Structures	NA							
	Slab and Monolith Joints	NA							
	Flap Gates/Flap Valves/Pinch Valves	NA							
	Riprap Revetments & Banks	NA							
	Revetments other than Riprap	NA							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

AUG 26 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the North Fork Feather River at Chester – West Levee System on October 28, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the North Fork Feather River at Chester – West Levee System is rated Unacceptable. Vegetation growth and depressions/rutting observations were determined to be unacceptable, however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our September 12, 2011, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to the board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the North Fork Feather River at Chester – West Levee System is active in the PL 84-99 RP.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Plumas County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Doug Lamalfa's office as required by our regulations.

Sincerely,

For Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: North Fork Feather River at Chester - west levee System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Active	North Fork Feather River at Chester - west levee (FRC1)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	A							
	Settlement	A							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 31 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Merced Stream Group – Owens Creek – Unit 1 Levee System on January 23-24, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Merced Stream Group – Owens Creek – Unit 1 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Merced Stream Group – Owens Creek – Unit 1 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Merced Stream Group - Owens Creek - Unit 1 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Merced County Stream Group - Owens Creek Diverting Canal right bank, Unit 1 (MGO1)
General	Operations and Maintenance Manuals	A
	Emergency Supplies and Equipment	A
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U
	Closure Structures	N/A
	Slope Stability	A
	Erosion/Bank Caving	M
	Animal Control	U
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	A
	Settlement	A
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	A

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

August 28, 2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUL 31 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Merced Stream Group – Owens Creek – Unit 2 Levee System on January 23-24, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Merced Stream Group – Owens Creek – Unit 2 Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving and animal control. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Merced Stream Group – Owens Creek – Unit 2 Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Merced County Office of Emergency Services, FEMA Region IX, and Congressman Jim Costa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Merced Stream Group - Owens Creek - Unit 2 Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Merced County Stream Group - Owens Creek Diverting Canal left bank, Unit 2 (MGO2)
General	Operations and Maintenance Manuals	A
	Emergency Supplies and Equipment	A
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U
	Closure Structures	N/A
	Slope Stability	M
	Erosion/Bank Caving	U
	Animal Control	U
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	M
	Settlement	M
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	A

Legend

A Acceptable

M Minimally Acceptable

U Unacceptable

N/A Not Applicable

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M Includes Unacceptable observations not likely to prevent performance in next flood event

U Serious deficiency noted in past inspection report has not been corrected within the established timeframe

U Likely prevents performance in next flood event

August 28, 2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

JUL 22 2014

REPLY TO
ATTENTION OF
Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0003 – Grand Island Levee System from November 12-29, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0003 – Grand Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, depressions/rutting, cracking, and seepage. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Vegetation growth, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0003 – Grand Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is

outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

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It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 0003 – Grand Island Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 0003 – Grand Island Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000651
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>RD 0003 – Grand Island, Unit 1, Steamboat Slough (GRI1)</td><td>5204000651</td><td>U</td></tr>
<tr><td>RD 0003 – Grand Island, Unit 2, Sacramento River (GRI2)</td><td>5204000652</td><td>U</td></tr>
</table>
</td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>Preparing Agency Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendices C.1 and C.2 for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but these items should not prevent the System from performing as intended in the next flood event with historic levels of flood-fighting.
Refer to Appendices C.1 and C.2 for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-583 (Supersedes ETL 1110-2-571).

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

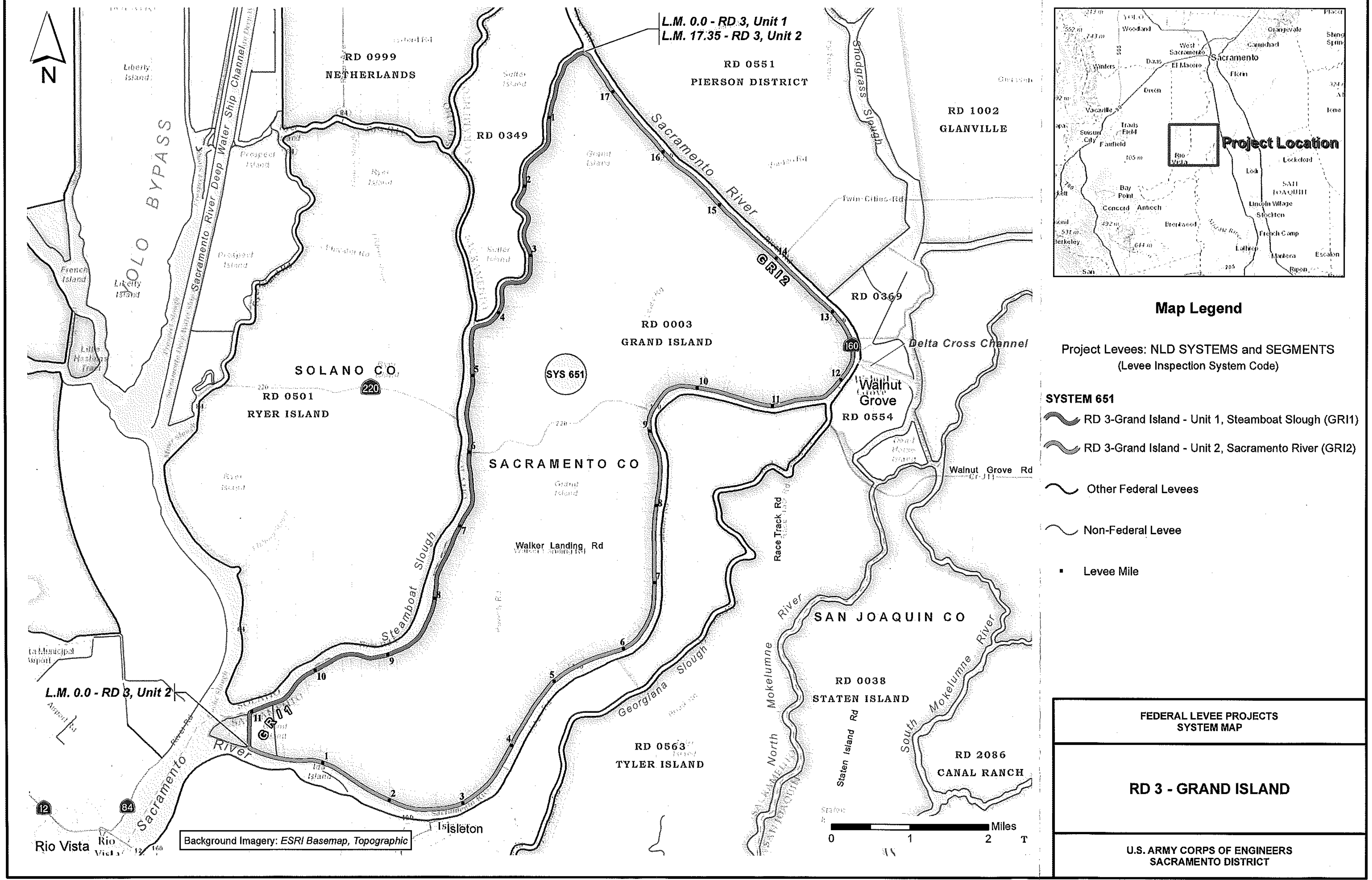
ED-G

	System: RD 0003 - Grand Island System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility:Inactive	RD 0003 - Grand Island, Unit 1, Steamboat Slough (GRI1)	RD 0003 - Grand Island, Unit 2, Sacramento River (GRI2)
General	Operations and Maintenance Manuals	A	A
	Emergency Supplies and Equipment	M	M
	Flood Preparedness and Training	M	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U
	Closure Structures	N/A	N/A
	Slope Stability	U	U
	Erosion/Bank Caving	U	U
	Animal Control	U	U
	Culverts/Discharge Pipes	N/A	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A
Levee Embankments - Other Items	Vegetation Growth	M	M
	Sod Cover	U	U
	Settlement	M	M
	Depressions/Rutting	U	U
	Cracking	M	U
	Riprap Revetments & Bank Protection	M	M
	Revetments other than Riprap	N/A	N/A
	Seepage	U	M

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within
U	Likely prevents performance in next flood event



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 651

RD 3-Grand Island - Unit 1, Steamboat Slough (GRI1)

RD 3-Grand Island - Unit 2, Sacramento River (GRI2)

Other Federal Levees

Non-Federal Levee

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

RD 3 - GRAND ISLAND

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

FEB 2013

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 22 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Putah Creek Right Bank – Unit 2 Levee System was conducted between January 9 through 12, 2012. The system is comprised of one segment.

System: Putah Creek Right Bank – Unit 2 Levee System
Putah Creek – Unit 2, Right Bank (PUT2)

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Putah Creek Right Bank Unit 2 Levee System is rated unacceptable because of encroachments and erosion/bank caving (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately

Vegetation, sod cover, depression/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system

rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services (OES), Solano County OES, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Putah Creek Right Bank - Unit 2
Unacceptable-Inactive

	Putah Creek - Unit 2, Right Bank (PUT2)
General Items	
Operations and Maintenance Manuals	A
Emergency Supplies and Equipment	A
Flood Preparedness and Training	A
Levee Embankment Items	
Vegetation Growth	U
Sod Cover	U
Encroachments	U
Closure Structures	N/A
Slope Stability	M
Erosion/Bank Caving	U
Settlement	M
Depressions/Rutting	U
Cracking	M
Animal Control	M
Culverts/Discharge Pipes	N/A
Riprap Revetments & Bank Protection	U
Revetments other than Riprap	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A
Seepage	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

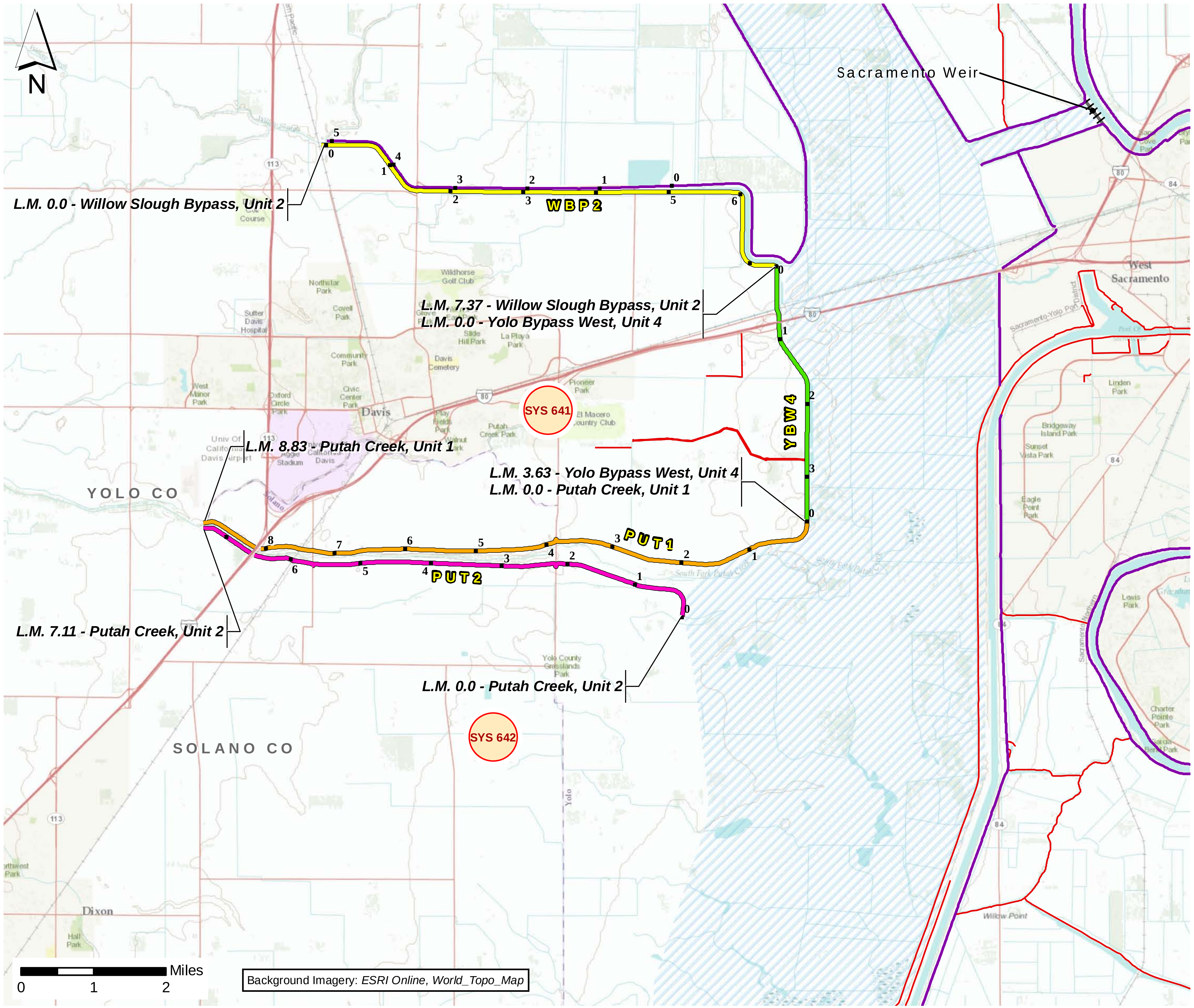
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

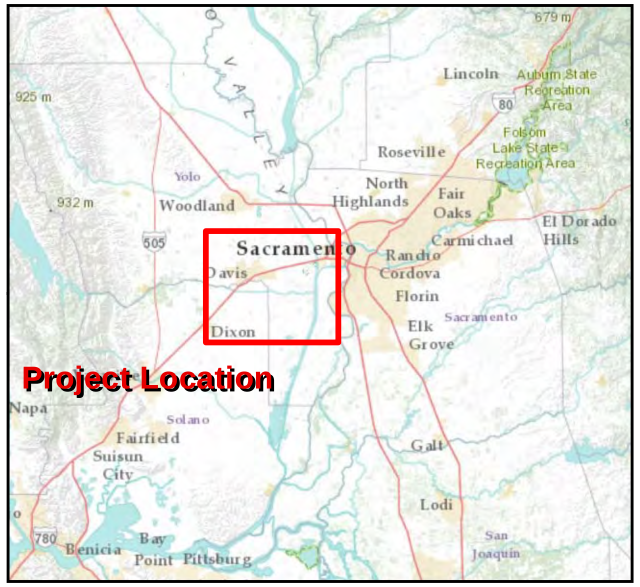
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

4/16/2012

Rev - 9/26/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 641

Willow Slough Bypass - Unit 2, right bank (WBP2)
Yolo Bypass West - Unit 4 (YBW4)
Putah Creek - Unit 1, left bank (PUT1)

SYSTEM 642

Putah Creek - Unit 2, right bank (PUT2)

Other Federal Levee

Non-Federal Levee

ǂǂǂǂ Flood Control Structure

Yolo Bypass

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

PUTAH CREEK - CITY OF DAVIS

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

MAY 2012

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 22 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Putah Creek Unit 1 – Yolo Bypass – Willow Slough Unit 2 Levee System was conducted between December 12, 2011 and January 9, 2012. The system is comprised of three segments.

System: Putah Creek Unit 1 – Yolo Bypass – Willow Slough Unit 2
Willow Slough Bypass Unit 2, Right Bank
Yolo Bypass – West Levee – Unit 4
Putah Creek – Unit 1, Left Bank

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Putah Creek Unit 1 – Yolo Bypass – Willow Slough Unit 2 Levee System is rated unacceptable because of encroachments, slope stability, erosion/bank caving, depressions/rutting and cracking (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, revetments other than riprap and floodwalls were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system

rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services (OES), Solano County OES, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Putah Creek Unit 1 - Yolo Bypass - Willow Slough Unit 2
Unacceptable-Inactive

	Willow Slough Bypass - Unit 2, Right Bank (WBP2)	Yolo Bypass - West Levee - Unit 4 (YBW4)	Putah Creek - Unit 1, Left Bank (PUT1)
General Items			
Operations and Maintenance Manuals	A	A	A
Emergency Supplies and Equipment	A	A	A
Flood Preparedness and Training	A	A	A
Levee Embankment Items			
Vegetation Growth	🟨 U	🟨 U	🟨 U
Sod Cover	🟨 U	A	A
Encroachments	🟥 U	🟥 U	🟥 U
Closure Structures	N/A	N/A	N/A
Slope Stability	M	A	🟥 U
Erosion/Bank Caving	🟥 U	🟥 U	🟥 U
Settlement	M	M	M
Depressions/Rutting	🟨 U	🟨 U	🟥 U
Cracking	🟥 U	🟥 U	🟥 U
Animal Control	M	M	M
Culverts/Discharge Pipes	N/A	N/A	N/A
Riprap Revetments & Bank Protection	M	M	M
Revetments other than Riprap	N/A	🟨 U	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A
Seepage	A	A	A
Floodwalls			
Unwanted Vegetation Growth	N/A	N/A	🟨 U
Encroachments	N/A	N/A	🟨 U
Closure Structures	N/A	N/A	N/A
Concrete Surfaces	N/A	N/A	N/A
Tilting, Sliding or Settlement of Concrete Structures	N/A	N/A	A
Foundation of Concrete Structures	N/A	N/A	A
Monolith Joints	N/A	N/A	A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	🟨 U
Seepage	N/A	N/A	A

Segment & System Ratings/PL 84-99 Eligibility

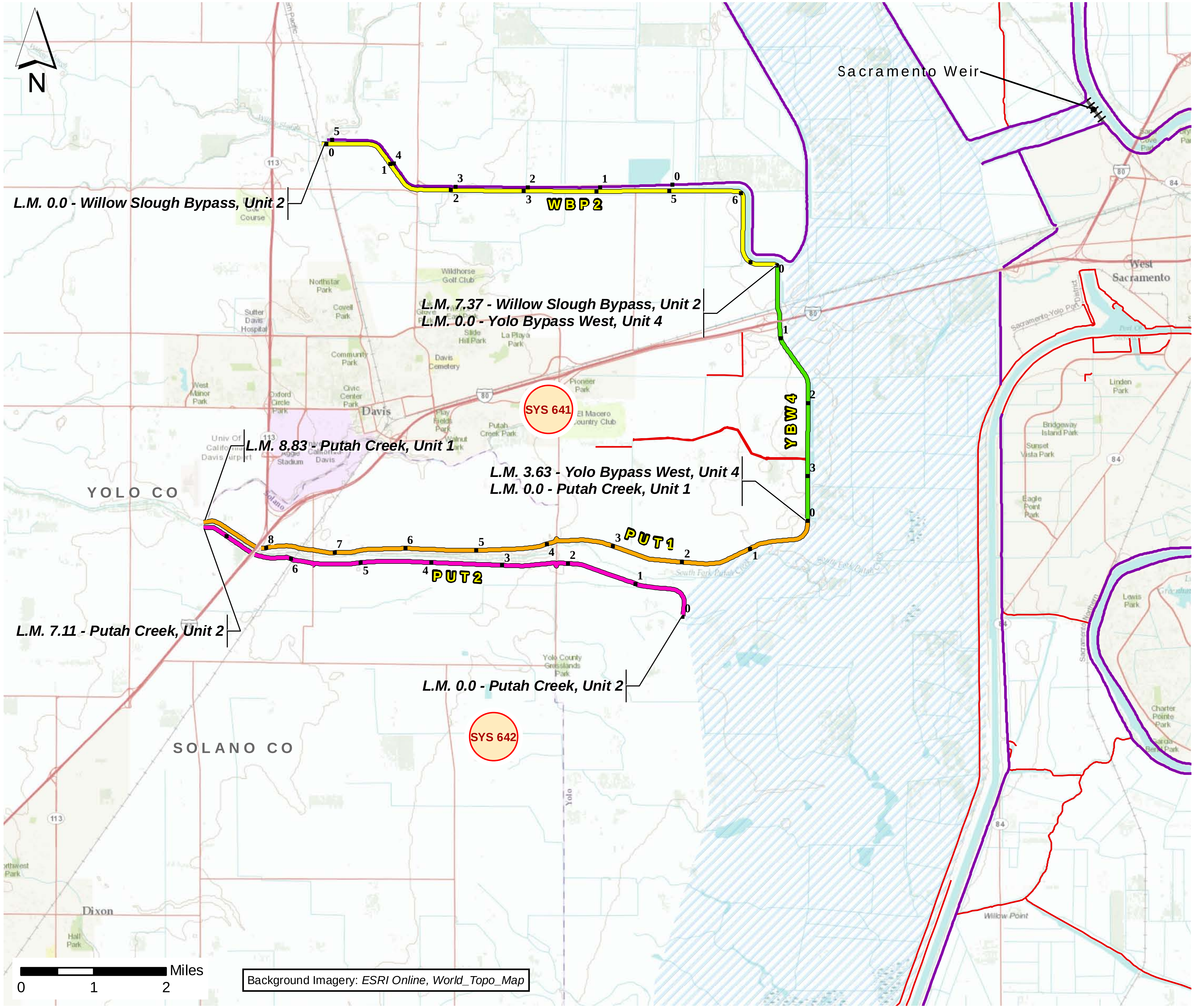
🟥 Likely Prevents Performance In Next Flood Event
🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe
🟨 Not Likely to Prevent Performance In Next Flood Event

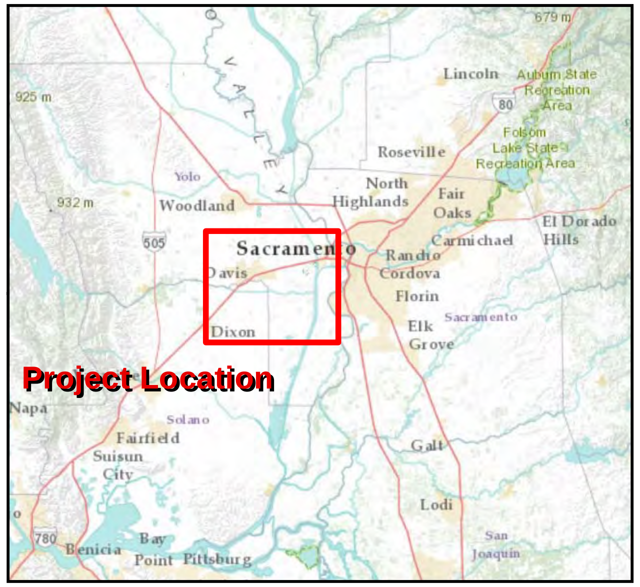
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

<u>Legend</u>

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

4/16/2012
Rev - 9/26/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 641

Willow Slough Bypass - Unit 2, right bank (WBP2)
Yolo Bypass West - Unit 4 (YBW4)
Putah Creek - Unit 1, left bank (PUT1)

SYSTEM 642

Putah Creek - Unit 2, right bank (PUT2)

Other Federal Levee
Non-Federal Levee
Flood Control Structure
Yolo Bypass
▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

PUTAH CREEK - CITY OF DAVIS

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

MAY 2012

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 0 9 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0001 and RD 2089 – Union Island Levee System on January 21-22, 2015. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0001 and RD 2089 – Union Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, and depressions/rutting (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, cracking, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our June 13, 2013, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0001 and RD 2089 – Union Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor

presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 0001 and RD 2089 - Union Island System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2089 - Stark - Unit 1, Old River (STK1)	RD 2089 - Stark - Unit 2, Salmon Slough (STK2)	RD 0001 - Union Island (UISL)					
General	Operations and Maintenance Manuals	A	A	A					
	Emergency Supplies and Equipment	A	A	A					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	U	U					
	Erosion/Bank Caving	U	U	M					
	Animal Control	U	U	U					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	U	U	U					
	Sod Cover	M	M	U					
	Settlement	A	A	A					
	Depressions/Rutting	M	U	M					
	Cracking	M	M	A					
	Riprap Revetments & Bank Protection	M	M	M					
	Revetments other than Riprap	NA	NA	NA					
	Seepage	M	A	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
🟪 U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE · UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

JUN 20 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 10 – Honcut Drainage Basin Levee System from January 2-9, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 10 – Honcut Drainage Basin Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, animal control, and seepage. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Slope stability, vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are Minimally Acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items and system will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 10 – Honcut Drainage Basin Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell for
Colonel, U.S. Army
District Commander

BRADEN LEMASTER
LTC, EN
DEPUTY COMMANDER.

Enclosures

System: RD 10 - Honcut Drainage Basin Levee System
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		RD 10 - Honcut - Unit 1, Jack Slough (HON1)	RD 10 - Honcut - Unit 2, Feather River (HON2)	RD 10 - Honcut - Unit 3, Honcut Creek (HON3)
General	Operations and Maintenance Manuals	M	M	M
	Emergency Supplies and Equipment	M	M	M
	Flood Preparedness and Training	M	M	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U	🟥 U	🟥 U
	Closure Structures	N/A	N/A	N/A
	Slope Stability	🟨 M	🟨 M	M
	Erosion/Bank Caving	🟥 U	A	A
	Animal Control	🟥 U	🟥 U	🟥 U
	Culverts/Discharge Pipes	N/A	N/A	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A
Levee Embankments - Other Items	Vegetation Growth	🟨 M	🟨 M	🟨 M
	Sod Cover	M	🟨 M	M
	Settlement	A	M	A
	Depressions/Rutting	🟨 M	🟨 M	🟨 M
	Cracking	M	A	A
	Riprap Revetments & Bank Protection	A	M	M
	Revetments other than Riprap	N/A	N/A	N/A
	Seepage	M	🟥 U	M

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

July 2, 2013

The worst rating is used to determine the overall segment and system ratings.

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 19 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0150 – Merritt Island Levee System on March 7-14, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0150 – Merritt Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, animal control, and depressions/rutting (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Slope stability, vegetation growth, sod cover, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0150 – Merritt Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 0150 - Merritt Island System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 0150 - Merritt Island - Unit 1, Sutter Slough (MRT1)	RD 0150 - Merritt Island - Unit 2, Sacramento River (MRT2)	RD 0150 - Merritt Island - Unit 3, Elk Slough (MRT3)					
General	Operations and Maintenance Manuals	M	M	M					
	Emergency Supplies and Equipment	A	A	A					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M	U	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	M	M					
	Erosion/Bank Caving	A	M	U					
	Animal Control	U	U	U					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	M	M	M					
	Sod Cover	A	M	M					
	Settlement	M	M	M					
	Depressions/Rutting	M	U	U					
	Cracking	A	A	A					
	Riprap Revetments & Bank Protection	M	M	M					
	Revetments other than Riprap	NA	NA	NA					
	Seepage	A	A	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 20 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0341 – Sherman Island Levee System on February 24 – March 1, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0341 – Sherman Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, depressions/rutting, and cracking (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, settlement, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0341 – Sherman Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety

issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 0341 - Sherman Island System Rating:Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 0341 - Sherman - Unit 1, Three Mile Slough (SHM1)	RD 0341 - Sherman - Unit 2, Sacramento River (SHM2)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	A	A						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	M	U						
	Erosion/Bank Caving	M	U						
	Animal Control	A	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankment - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	U						
	Settlement	M	M						
	Depressions/Rutting	U	M						
	Cracking	A	U						
	Riprap Revetments & Bank Protection	M	M						
	Revetments other than Riprap	NA	NA						
	Seepage	M	M						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 19 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0501 – Ryer Island Levee System on March 5-13, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of four segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0501 – Ryer Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, depressions/rutting, and cracking (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0501 – Ryer Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: RD 0501 - Ryer Island
System Rating: Unacceptable
Approved SWIF/LOI: No
PL 84-99 RP Eligibility: Inactive

		RD 0501 - Ryer Island - Unit 1, Steamboat Slough (RYR1)	RD 0501 - Ryer Island - Unit 2, Cache Slough (RYR2)	RD 0501 - Ryer Island - Unit 3, Miner Slough (RYR3)	RD 0501 - Ryer Island - Unit 4, Sutter Slough (RYR4)
General	Operations and Maintenance Manuals	A	A	A	A
	Emergency Supplies and Equipment	A	A	A	A
	Flood Preparedness and Training	M	M	M	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U	U
	Closure Structures	NA	NA	NA	NA
	Slope Stability	M	U	M	M
	Erosion/Bank Caving	U	U	M	A
	Animal Control	M	M	U	U
	Culverts/Discharge Pipes	NA	NA	NA	NA
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA
Levee Embankments - Other Items	Vegetation Growth	M	M	M	M
	Sod Cover	M	M	M	M
	Settlement	M	M	M	M
	Depressions/Rutting	U	M	U	U
	Cracking	M	U	M	A
	Riprap Revetments & Bank Protection	M	M	M	M
	Revetments other than Riprap	NA	NA	NA	NA
	Seepage	M	A	A	A

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 0 9 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0524 and RD 0544 – Roberts Island Levee System on January 12-16, 2015. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0524 and RD 0544 – Roberts Island Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, and depressions/rutting (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our May 14, 2012, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0524 and RD 0544 – Roberts Island Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 0524 and RD 0544 - Roberts Island System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 0524 - Middle Roberts Island (MROB)	RD 0544 - Upper Roberts Island - Unit 1, San Joaquin River left bank (URI1)	RD 0544 - Upper Roberts Island - Unit 2, Old River (URI2)					
General	Operations and Maintenance Manuals	A	A	A					
	Emergency Supplies and Equipment	A	A	A					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	M	U					
	Erosion/Bank Caving	U	M	M					
	Animal Control	U	U	U					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	U	U	U					
	Sod Cover	U	U	U					
	Settlement	M	A	A					
	Depressions/Rutting	U	U	U					
	Cracking	A	A	A					
	Riprap Revetments & Bank Protection	M	M	M					
	Revetments other than Riprap	M	NA	NA					
	Seepage	M	M	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JUL 22 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0536 – Egbert Tract Levee System on August 25-28, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 0536 – Egbert Tract Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, settlement, depressions/rutting, cracking, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 0536 – Egbert Tract Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor

develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 0536 - Egbert tract System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 0536 - Egbert - Unit 1, Lindsey Slough (EGB1)	RD 0536 - Egbert - Unit 2, south levee (EGB2)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	U	A						
	Erosion/Bank Caving	U	A						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	A						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	M	M						
	Riprap Revetments & Bank Protection	M	A						
	Revetments other than Riprap	NA	NA						
	Seepage	M	M						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

JUL 22 2014

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 817 and RD 2103 – City of Wheatland Levee System from February 5-13, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of four segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 817 and RD 2103 – City of Wheatland Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, and depressions/rutting. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately (shown in red on the Report Card).

Erosion/bank caving, animal control, vegetation growth, settlement, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 817 and RD 2103 – City of Wheatland Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is

outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's and Congressman Tom McClintock's offices as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 0817 and RD 2103 - City of Wheatland Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 0817 and RD 2103 - City of Wheatland Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205001011
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>RD 0817 - Carlin - Unit 1, Dry Creek (CAR1)</td><td>5204000871</td><td>U</td></tr>
<tr><td>RD 0817 - Carlin - Unit 2, Bear River (CAR2)</td><td>5204000872</td><td>U</td></tr>
<tr><td>RD 2103 - Wheatland Vicinity - Unit 2, Bear River (WV02)</td><td>5204001012</td><td>U</td></tr>
<tr><td>RD 2103 - Wheatland Vicinity - Unit 1, Dry Creek below Grasshopper Slough (WV1A)</td><td>5204001011</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
</table>

Preparing Contractor Name and Address	RJH Consultants, Inc. 9800 Mount Pyramid Ct., Ste. 300 Englewood, CO 80112-2668

System Rating generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C for a list of Unacceptable items.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate correction, but these items should not prevent the System from performing in the next flood event with historic levels of flood-fighting.
Refer to Appendix C for a list of Unacceptable items.

The Unacceptable Points and Lines Summary for CAR1 were updated in September 2013. Two seepage points (USACE_CESPK_CAR1_2013_a_0143 and USACE_CESPK_CAR1_2013_a_0144) were deleted from the Unacceptable Points and Line Summary, as these points are representative of Minimally Acceptable ratings. The attached Report Card reflects this change.

The Report Card and the List of Unacceptable Rated Items for WV02 and WV1A were updated in March 2014 based on comments and additional information provided by the Sponsor and Local Maintaining Agencies (LMAs). This resulted in the coding of some individual observations being changed from Red (likely to Prevent Performance in Next Flood Event) to Yellow (Not Likely to Prevent Performance in Next Flood Event), Minimally Acceptable, or Acceptable. The Inspection Checklists in Appendices C.1.1 through C.1.3 of the report were not updated. The attached Report Card reflects this change.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-583 (supersedes ETL 1110-2-571).

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

System: RD 817 and RD 2103
City of Wheatland
System Rating: Unacceptable
Approved SWIF / LOI: No
PL 84-99 RP Eligibility: Inactive

		RD 0817 - Carlin - Unit 1, Dry Creek (CAR1)	RD 0817 - Carlin - Unit 2, Bear River (CAR2)	RD 2103 - Wheatland Vicinity - Unit 2, Bear River (WV02)	RD 2103 - Wheatland Vicinity - Unit 1, Dry Creek below Grasshopper Slough (WV1A)
General	Operations and Maintenance Manuals	M	M	M	M
	Emergency Supplies and Equipment	A	A	A	A
	Flood Preparedness and Training	M	M	M	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	M	U	U
	Closure Structures	N/A	N/A	N/A	N/A
	Slope Stability	M	M	U	M
	Erosion/Bank Caving	M	A	M	M
	Animal Control	M	M	M	M
	Culverts/Discharge Pipes	N/A	N/A	N/A	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	M	N/A
Levee Embankments - Other Items	Vegetation Growth	M	M	M	M
	Sod Cover	A	M	A	M
	Settlement	M	M	M	M
	Depressions/Rutting	U	U	M	M
	Cracking	A	A	A	A
	Riprap Revetments & Bank Protection	M	N/A	M	M
	Revetments other than Riprap	N/A	N/A	N/A	N/A
	Seepage	M	A	A	A

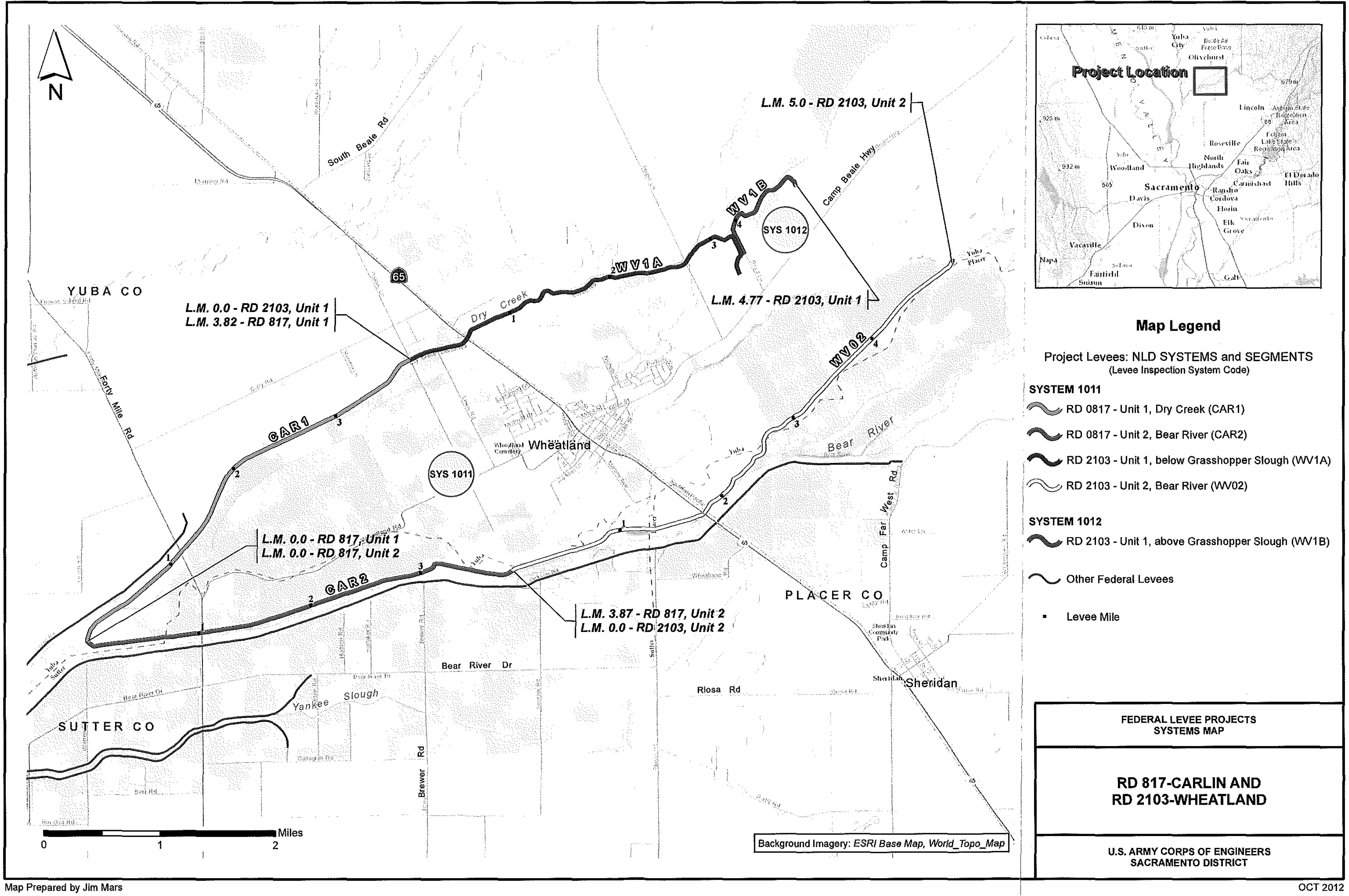
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

July 8, 2013

The worst rating is used to determine the overall segment and system ratings.



Background Imagery: *ESRI Base Map, World_Topo_Map*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 1011

- RD 0817 - Unit 1, Dry Creek (CAR1)
- RD 0817 - Unit 2, Bear River (CAR2)
- RD 2103 - Unit 1, below Grasshopper Slough (WV1A)
- RD 2103 - Unit 2, Bear River (WV02)

SYSTEM 1012

- RD 2103 - Unit 1, above Grasshopper Slough (WV1B)

- Other Federal Levees

▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEMS MAP

RD 817-CARLIN AND
RD 2103-WHEATLAND

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

OCT 2012

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SACRAMENTO ENGINEER DISTRICT
U.S. ARMY CORPS OF ENGINEERS (USACE)
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

JUL 01 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

This is in response to your January 8, 2013, letter requesting a re-inspection of the Reclamation District (RD) 1000- Natomas levee system. The photo documentation of the corrections in your re-inspection request and as well as information from a field visit with USACE, CVFPB, and RD 1000 staffs was sufficient to verify the corrections made in the field. A revised report card, photos of the corrections, and a revised unacceptable deficiency list serve as a summary of the findings. The system is comprised of 5 segments:

System: RD 1000- Natomas
Segments: RD 1000 - Natomas - Unit 1, Sacramento River
RD 1000 - Natomas - Unit 2, American River
RD 1000 - Natomas - Unit 3 north, Cross Canal inflow
RD 1000 - Natomas - Unit 3 south, NMDEC
RD 1000 - Natomas - Unit 4, Natomas Cross Canal

The system rating is determined based on the USACE inspection checklist. The following color coding system was used for unacceptable rated items:

Rating Classification	Status	Time to Fix Before Becoming Inactive
Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately
Likely to prevent the system from performing as intended during the next flood event	Active	In accordance with the Letter of Intent/System Wide Improvement Framework Plan
Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
Not likely to prevent the system from performing as intended during the next flood event	Active	In accordance with the Letter of Intent/System Wide Improvement Framework Plan
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.		

The most concerning encroachment and erosion deficiencies have been repaired, adjacent levees have been constructed, or deficiencies otherwise addressed so the overall system rating is now minimally acceptable. The RD 1000- Natomas system is rated minimally acceptable and active for PL 84-99 rehabilitation assistance effective on the date of your reinspection request, January 8, 2013. Additionally, USACE approved your Letter of Intent (LOI) to produce a System Wide Improvement Framework (SWIF) for the RD 1000 system on May 16, 2013.

Vegetation and encroachments continue to be unacceptable, but an engineering determination concluded they would not prevent the system from performing as intended during the next flood event (shown in yellow on the report card). Continued progress on vegetation and encroachment maintenance should be completed during the 2 year time period between approval of your LOI and submittal of your SWIF. If the SWIF is approved, corrections should be made in accordance with the approved SWIF. A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. We appreciate your commitment to making system wide improvements by addressing the highest risk issues first. Any deficiencies not corrected within the timelines noted above will be noted as pink during the next inspection and will cause the system to become inactive.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. The levee log needs to be updated and should include whether the USACE conditions stated in the USACE recommendation letter are being met. A copy of all USACE recommendation letters, organized by permit number, is available upon request. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agency to complete repairs of these unacceptable items. These maintenance activities have improved the overall condition of the system. We urge your Board and the Local Maintaining Agency to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento and Sutter County Offices of Emergency Services, FEMA Region IX, and the Congresswoman Doris Matsui's and Congressman John Garamendi's offices.

Sincerely,

William J. Leady

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures
1) Report Card
2) Revised U Rated Item Spreadsheet

RD 1000 - Natomas Minimally Acceptable-Active	Unit 1, Sacramento River	Unit 2, American River	Unit 3 South, NEMDC	Unit 3 North, Cross Canal inflow	Unit 4, Natomas Cross Canal				
Operations and Maintenance Manuals	M	M	M	M	M				
Emergency Supplies and Equipment	A	A	A	A	A				
Flood Preparedness and Training	A	A	A	A	A				
Unwanted Vegetation Growth	U	U	U	U	U				
Sod Cover	A	A	A	A	A				
Encroachments	U	U	U	U	U				
Closure Structures	NA	NA	NA	NA	NA				
Slope Stability	M	A	M	A	M				
Erosion/Bank Caving	M	M	M	M	M				
Settlement	M	A	A	A	A				
Depressions/Rutting	A	A	M	M	A				
Cracking	M	A	M	A	A				
Animal Control	M	A	M	M	M				
Culverts/Discharge Pipes	NA	NA	NA	NA	NA				
Riprap Revetments & Bank Protection	M	NA	M	M	A				
Revetments other than Riprap	NA	NA	NA	NA	NA				
Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA	NA				
Seepage	A	A	A	A	A				

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Likely Prevents Performance In Next Flood Event (SWIF)

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (SWIF)

Legend	
A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

RD 1001 - Bear River and Yankee Slough Levee System
Unacceptable - Active

	RD 1001 - Nicolaus - Unit 3 east, Bear River left bank above Yankee Slough (NICU)	RD 1001 - Nicolaus - Unit 1, Yankee Slough right bank (NIC1)
General Items		
Operations and Maintenance Manuals	M	M
Emergency Supplies and Equipment	A	A
Flood Preparedness and Training	A	A
Levee Embankment Items		
Unwanted Vegetation Growth	U	U
Sod Cover	U	N/A
Encroachments	U	U
Closure Structures	N/A	N/A
Slope Stability	M	M
Erosion/Bank Caving	U	A
Settlement	A	A
Depressions/Rutting	U	U
Cracking	A	A
Animal Control	U	U
Culverts/Discharge Pipes	N/A	N/A
Riprap Revetments & Bank Protection	U	N/A
Revetments other than Riprap	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A
Seepage	A	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

RD 1001 - Nicolaus, Feather River
Levee System
Unacceptable - Active

	RD 1001 - Nicolaus - Unit 2, Yankee Slough left bank (NIC2)	RD 1001 - Nicolaus - Unit 3, Bear River left bank below Yankee Slough (NIC3)	RD 1001 - Nicolaus - Unit 4, Feather River left bank (NIC4)	RD 1001 - Nicolaus - Unit 5, Natomas Cross Canal right bank (NIC5)	RD 1001 - Nicolaus - Unit 6, Cross Canal inflow north (NIC6)
General Items					
Operations and Maintenance Manuals	M	M	M	M	M
Emergency Supplies and Equipment	A	A	A	A	A
Flood Preparedness and Training	A	A	A	A	A
Levee Embankment Items					
Unwanted Vegetation Growth	U	U	U	U	U
Sod Cover	N/A	A	U	A	A
Encroachments	U	U	U	U	U
Closure Structures	N/A	N/A	N/A	N/A	N/A
Slope Stability	M	M	U	M	A
Erosion/Bank Caving	U	M	U	U	M
Settlement	A	A	A	A	A
Depressions/Rutting	U	U	U	M	U
Cracking	A	A	U	U	A
Animal Control	U	U	U	U	U
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A
Riprap Revetments & Bank Protection	A	U	U	A	N/A
Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A
Seepage	A	A	U	M	M

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

AUG 20 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 1602 – Del Puerto Levee System on November 10-11, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the RD 1602 – Del Puerto Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our August 16, 2013, inspection report for the same levee system that have not been corrected, therefore the vegetation growth item rating remains unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 1602 – Del Puerto Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Stanislaus County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jeff Denham.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 1602 - Del Puerto System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 1602 - Del Puerto (DELP)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	U							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	M							
	Settlement	A							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

AUG 28 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2031 - Elliot Levee System on October 13 - 16, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2031 - Elliot Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, depressions/rutting and cracking (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our August 16, 2013, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2031 - Elliot Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Stanislaus County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jeff Denham's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2031 - Elliot System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2031 - Elliott - Unit 1, Stanislaus River left bank (ELT1)	RD 2031 - Elliott - Unit 2, San Joaquin River right bank (ELT2)						
General	Operations and Maintenance Manuals	A	A						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	U	M						
	Erosion/Bank Caving	U	U						
	Animal Control	U	M						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	U	U						
	Sod Cover	M	U						
	Settlement	M	M						
	Depressions/Rutting	U	U						
	Cracking	A	U						
	Riprap Revetments & Bank Protection	NA	M						
	Revetments other than Riprap	NA	NA						
	Seepage	A	M						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF
Operations and Readiness Branch

SEP 25 2014

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2058 and RD 2095 – Paradise Cut Levee System on February 11-14, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2058 and RD 2095 – Paradise Cut Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving and depressions/rutting (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2058 and RD 2095 – Paradise Cut Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office and Congressman Jeff Denham's office as required by our regulations.

Sincerely,

for Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2058 and RD 2095 - Paradise Cut Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	RD 2058 - Pescadero (PESC)	RD 2095 - Paradise Cut - Unit 1, Paradise Cut (PAR1)	RD 2095 - Paradise Cut - Unit 2, San Joaquin River Left Bank (PAR2)					
General	Operations and Maintenance Manuals	A	A	A					
	Emergency Supplies and Equipment	M	M	M					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	U	M					
	Erosion/Bank Caving	M	U	U					
	Animal Control	M	M	M					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	M	M	M					
	Sod Cover	M	M	M					
	Settlement	A	A	A					
	Depressions/Rutting	M	U	M					
	Cracking	A	A	A					
	Riprap Revetments & Bank Protection	M	A	M					
	Revetments other than Riprap	NA	NA	NA					
	Seepage	M	A	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
U	Likely prevents performance in next flood event

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

SEP 0 9 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2062 and RD 2107 – Stewart Tract Levee System on January 12-16, 2015. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of five segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2062 and RD 2107 – Stewart Tract Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, animal control, and sod cover (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Slope stability, vegetation growth, settlement, depressions/rutting, cracking, riprap revetments and bank protections, and seepage observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event. There were unacceptable observations identified in our June 13, 2013, inspection report for the same levee system that have not been corrected, therefore the item ratings remain unacceptable (shown in pink on the Report Card). All pink observations have previously been reported to your board and should be corrected in accordance with the operation and maintenance manual. Unacceptable items that would not prevent the system from performing as intended identified for the first time are shown in yellow on this Report Card. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2062 and RD 2107 – Stewart Tract Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor

presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jerry McNerney's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2062 - Stewart Tract System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2107 - Mossdale - Unit 1, San Joaquin River left bank (MSS1)	RD 2107 - Mossdale - Unit 2, Paradise Cut (MSS2)	RD 2062 - Stewart - Unit 1, San Joaquin River left bank (STW1)	RD 2062 - Stewart - Unit 2, Paradise Cut (STW2)	RD 2062 - Stewart - Unit 3, Old River (STW3)			
General	Operations and Maintenance Manuals	A	A	A	A	A			
	Emergency Supplies and Equipment	A	A	A	A	A			
	Flood Preparedness and Training	A	A	A	A	A			
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U	U	U			
	Closure Structures	NA	NA	NA	NA	NA			
	Slope Stability	M	A	M	M	M			
	Erosion/Bank Caving	U	U	M	U	U			
	Animal Control	U	U	U	U	U			
	Culverts/Discharge Pipes	NA	NA	NA	NA	NA			
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA	NA			
Levee Embankments - Other Items	Vegetation Growth	U	U	U	U	U			
	Sod Cover	U	U	U	M	M			
	Settlement	M	M	A	M	A			
	Depressions/Rutting	M	M	M	M	M			
	Cracking	A	A	A	A	M			
	Riprap Revetments & Bank Protection	M	A	M	M	M			
	Revetments other than Riprap	NA	NA	NA	NA	NA			
	Seepage	M	A	A	M	A			

Legend

A	Acceptable	M	Includes Unacceptable observations not likely to prevent performance in next flood event
M	Minimally Acceptable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Unacceptable		
N/A	Not Applicable	U	Likely prevents performance in next flood event

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUN 13 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the RD 2068 and RD 2098 – Yolano – Cache Slough Levee System was conducted from February 15-23, 2012. The system is comprised of six segments.

System: RD 2068 and RD 2098 – Yolano – Cache Slough
RD 2068 – Yolano – Unit 1, Shag Slough
RD 2068 – Yolano – Unit 2
RD 2098 – Cache Slough-Haas Slough, Unit 1, Shag Slough
RD 2098 – Cache Slough-Haas Slough, Unit 2, Shag Slough
RD 2098 – Cache Slough-Haas Slough, Unit 3, Shag Slough
RD 2098 – Cache Slough-Haas Slough, Unit 4, Shag Slough

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, RD 2068 and RD 2098 – Yolano – Cache Slough Levee System is rated unacceptable because of encroachments, slope stability, erosion/bank caving, depressions/rutting and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would <u>not</u> prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

The status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

ANDREW [illegible]
LTC EN
DPTY CDR

Enclosures

RD 2068 and RD 2098 - Yolano-Cache Slough
Unacceptable - Inactive

	RD 2068 - Yolano - Unit 1, Shag Slough (YOL1)	RD 2068 - Yolano - Unit 2 (YOL2)	RD 2098 - Cache Slough-Haas Slough - Unit 1, Shag Slough (CAH1)	RD 2098 - Cache Slough-Haas Slough - Unit 2, Cache Slough (CAH2)	RD 2098 - Cache Slough-Haas Slough - Unit 3, Haas Slough (CAH3)	RD 2098 - Cache Slough-Haas Slough - Unit 4 (CAH4)
General Items						
Operations and Maintenance Manuals	A	A	A	A	A	A
Emergency Supplies and Equipment	A	A	A	A	A	A
Flood Preparedness and Training	M	M	M	M	M	M
Levee Embankment Items						
Vegetation Growth	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U
Sod Cover	A	A	A	A	A	A
Encroachments	🟥 U	🟥 U	🟥 U	🟥 U	🟨 U	🟥 U
Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A
Slope Stability	🟥 U	🟨 U	🟥 U	🟥 U	🟥 U	🟥 U
Erosion/Bank Caving	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U
Settlement	A	A	A	A	A	A
Depressions/Rutting	M	M	🟨 U	M	🟥 U	M
Cracking	🟨 U	🟨 U	🟨 U	🟨 U	🟥 U	🟨 U
Animal Control	🟥 U	M	M	🟨 U	M	M
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A
Riprap Revetments & Bank Protection	M	A	🟨 U	🟨 U	A	M
Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A
Seepage	A	A	A	A	A	A

Segment & System Ratings/PL 84-99 Eligibility

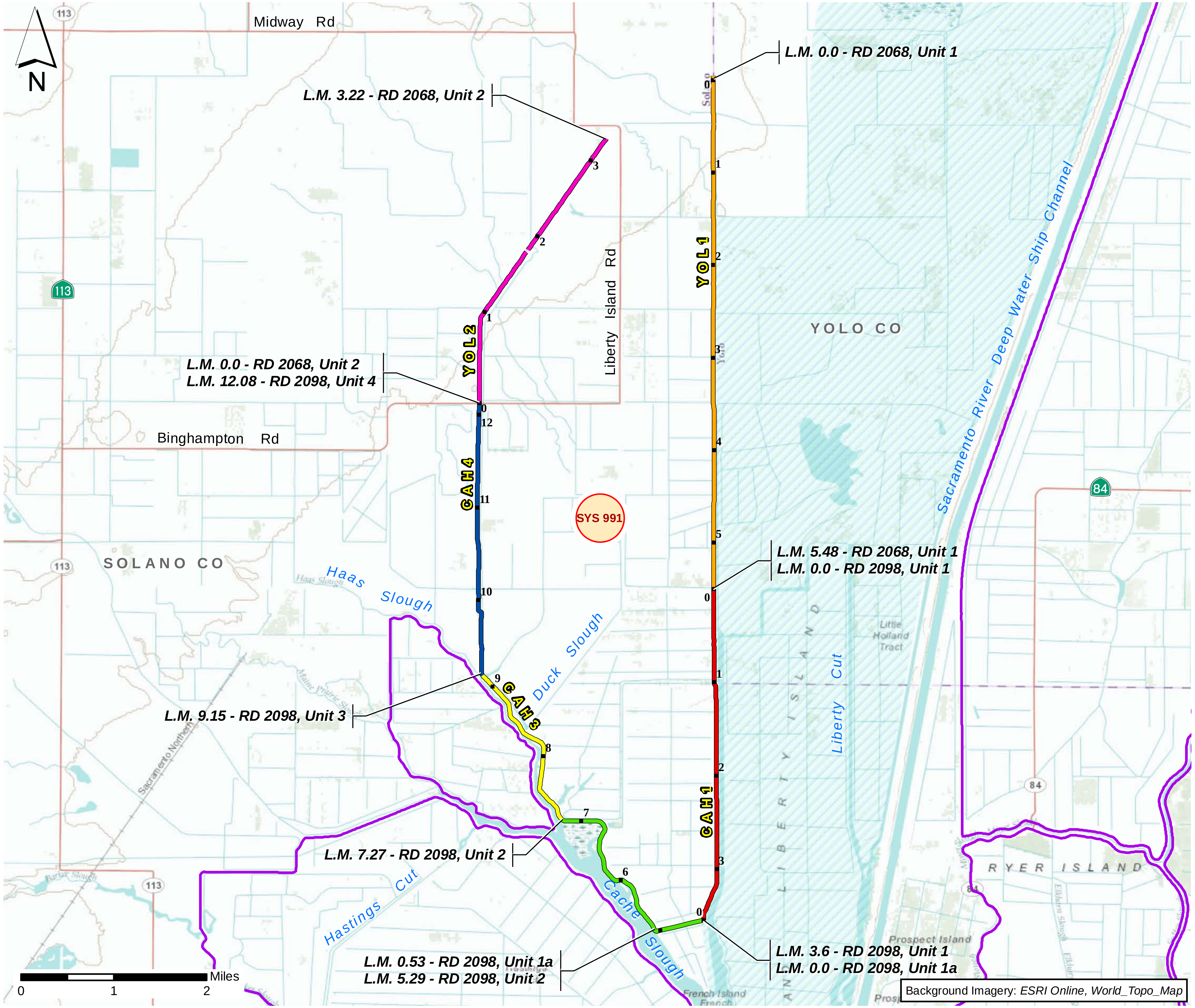
🟥 Likely Prevents Performance In Next Flood Event
🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe
🟨 Not Likely to Prevent Performance In Next Flood Event

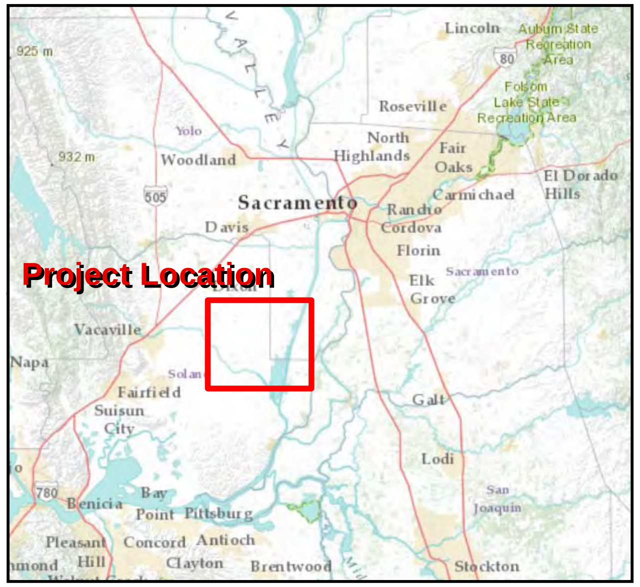
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

5/30/2012
Rev - 9/26/2012





Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 991

- RD 2068 - Unit 1, Shag Slough (YOL1)
- RD 2068 - Unit 2 (YOL2)
- RD 2098 - Unit 1, Shag Slough (CAH1)
- RD 2098 - Unit 2, Cache Slough (CAH2)
- RD 2098 - Unit 3, Haas Slough (CAH3)
- RD 2098 - Unit 4 (CAH4)
- Other Federal Levees
- ▨ Yolo Bypass
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS SYSTEMS MAP

RD 2068-YOLANO AND RD 2098-CACHE-HAAS SLOUGHS

U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT

Map Prepared by Jim Mars

MAY 2012

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUN 24 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2085 – Kasson District Levee System on September 29-30, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of three segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2085 – Kasson District Levee System is rated Unacceptable. The unacceptable rating is due to erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Encroachments, slope stability, vegetation growth, sod cover, settlement, depressions/rutting, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Yellow observations identified in our inspection report dated May 22, 2014, must be improved to at least a minimally acceptable condition by May 22, 2016. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2085 – Kasson District Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jeff Denham.

Sincerely,

FOR Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: RD 2085 - Kasson District
System Rating: Unacceptable
Approved LOI/SWIF: No
PL 84-99 RP Eligibility: Inactive

		RD 2085 - Kasson - Unit 1, San Joaquin River left bank (KAS1)	RD 2085 - Kasson - Unit 2, spur levee north (KAS2)	RD 2085 - Kasson - Unit 3, spur levee south (KAS3)					
General	Operations and Maintenance Manuals	A	A	A					
	Emergency Supplies and Equipment	A	A	A					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟨 M	🟨 M	M					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	A	🟨 M					
	Erosion/Bank Caving	🟥 U	A	🟥 U					
	Animal Control	🟥 U	🟥 U	🟥 U					
	Culverts/Discharge Pipes	NA	NA	NA					
	Underseepage Relief Wells/Toe Drainage Systems	M	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	🟨 M	M	🟨 M					
	Sod Cover	🟨 M	🟨 M	A					
	Settlement	🟨 M	🟨 M	🟨 M					
	Depressions/Rutting	🟨 M	M	🟨 M					
	Cracking	A	A	A					
	Riprap Revetments & Bank Protection	A	M	🟨 M					
	Revetments other than Riprap	NA	NA	NA					
	Seepage	M	A	A					

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUN 24 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2092 – Dos Rios Ranch Levee System on September 10, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the RD 2092 – Dos Rios Ranch Levee System is rated Unacceptable. The unacceptable rating is due to encroachments and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Slope stability, vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Yellow observations identified in our inspection report dated November 20, 2013, must be improved to at least a minimally acceptable condition by November 20, 2015. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2092 – Dos Rios Ranch Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Stanislaus County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jeff Denham.

Sincerely,

For Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2092 - Dos Rios Ranch System Rating: Unacceptable Approved SWIF/LOI: No PI 84-99 RP Eligibility: Inactive	RD 2092 - Dos Rios (DRIO)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	M							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUN 24 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2101 – Blewatt District Levee System on October 1-2, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2101 – Blewatt District Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Yellow observations identified in our inspection report dated July 24, 2013, must be improved to at least a minimally acceptable condition by July 24, 2015. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2101 – Blewatt District Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical

concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, Stanislaus County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, and Congressman Jeff Denham.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2101 - Blewatt District System Rating: Unacceptable Approved LOI/SWIF: No PL 84-99 RP Eligibility: Inactive	RD 2101 - Blewatt - Unit 1, San Joaquin River left bank (BLW1)	RD 2101 - Blewatt - Unit 2, spur levee (BLW2)						
General	Operations and Maintenance Manuals	A	A						
	Emergency Supplies and Equipment	A	A						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	M						
	Closure Structures	NA	NA						
	Slope Stability	U	M						
	Erosion/Bank Caving	U	M						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	A	A						
	Revetments other than Riprap	NA	NA						
	Seepage	M	A						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUL 22 2014

Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2103 – Grasshopper Slough Levee System on February 13, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the RD 2103 – Grasshopper Slough Levee System is rated Unacceptable. The unacceptable rating is due to encroachments. An engineering determination, based upon visual inspection, concluded that this issue is likely to prevent the system from performing as intended during the next flood event. This issue should be addressed immediately (shown in red on the Report Card).

Animal control, vegetation growth, sod cover, and depressions/rutting observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2103 – Grasshopper Slough Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is

outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

M J Farrell

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 2103 - Grasshopper Slough Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 2103 - Grasshopper Slough Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205001012
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>RD 2103 - Wheatland Vicinity - Unit 1, Dry Creek above Grasshopper Slough (WV1B)</td><td>5204001013</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>Preparing Contractor Name and Address</td><td>RJH Consultants, Inc.
9800 Mount Pyramid Ct., Ste. 300
Englewood, CO 80112-2668</td></tr>
</table>

System Rating generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C for a list of Unacceptable items.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate correction, but these items should not prevent the System from performing in the next flood event with historic levels of flood-fighting.
Refer to Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-583 (supersedes ETL 1110-2-571).

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

	System: RD 2103 Grasshopper Slough System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	RD 2103 - Wheatland Vicinity - Unit 1, Dry Creek above Grasshopper Slough (WV1B)
General	Operations and Maintenance Manuals	M
	Emergency Supplies and Equipment	A
	Flood Preparedness and Training	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U
	Closure Structures	N/A
	Slope Stability	M
	Erosion/Bank Caving	M
	Animal Control	M
	Culverts/Discharge Pipes	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A
Levee Embankments - Other Items	Vegetation Growth	M
	Sod Cover	M
	Settlement	M
	Depressions/Rutting	M
	Cracking	A
	Riprap Revetments & Bank Protection	N/A
	Revetments other than Riprap	N/A
	Seepage	A

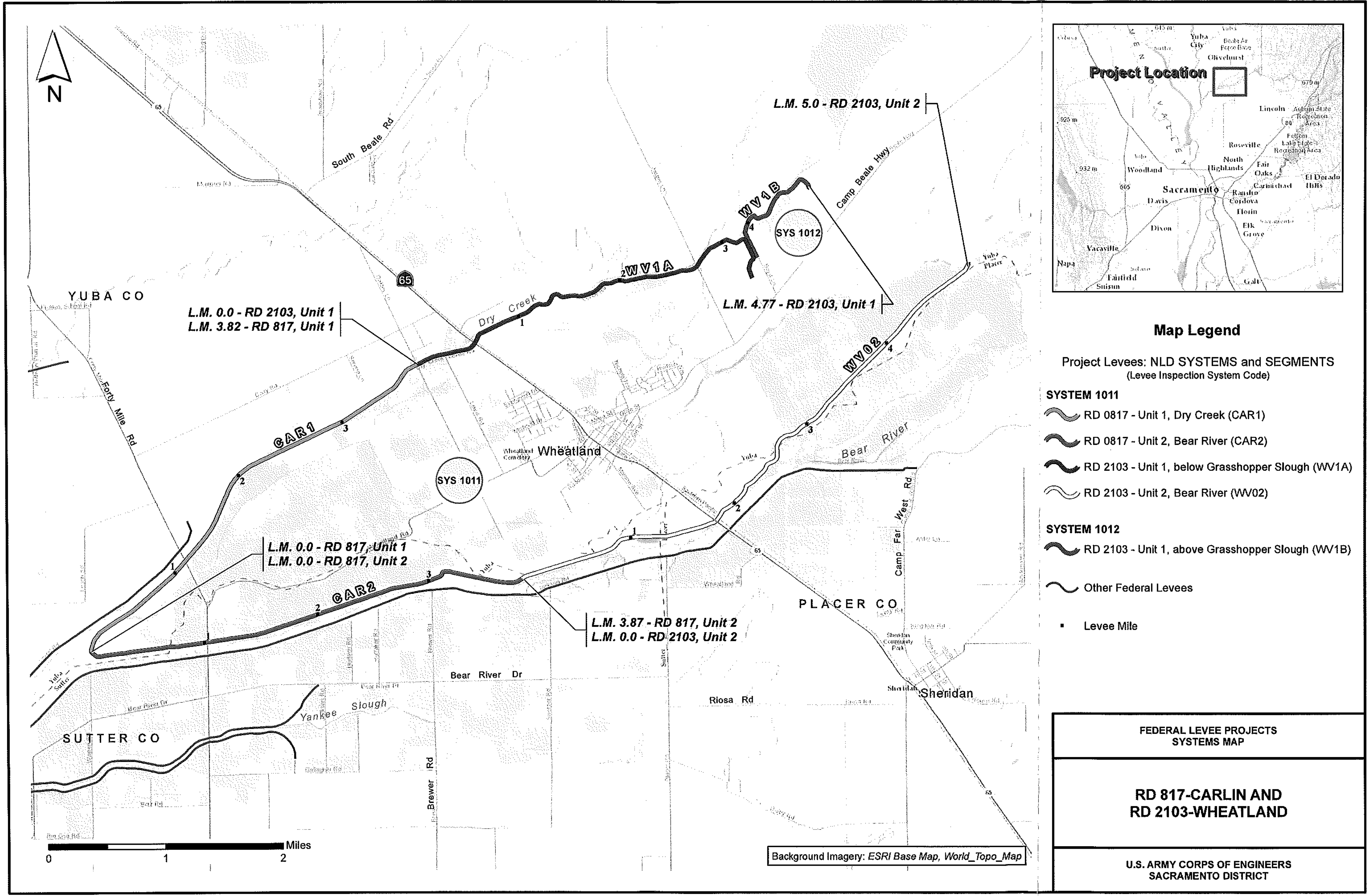
Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

July 8, 2013

The worst rating is used to determine the overall segment and system ratings.



FEDERAL LEVEE PROJECTS
SYSTEMS MAP

RD 817-CARLIN AND RD 2103-WHEATLAND

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

OCT 2012

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

JUN 24 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 2104 – Peters Pocket Levee System on April 7-8, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of two segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 2104 – Peters Pocket Levee System is rated Unacceptable. The unacceptable rating is due to slope stability, erosion/bank caving, and depressions/rutting (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Encroachments, vegetation growth, and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Yellow observations identified in our inspection report dated June 9, 2014, must be improved to at least a minimally acceptable condition by June 9, 2016. Correction of all new yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 2104 – Peters Pocket Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety

issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi.

Sincerely,

FOR Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 2104 - Peters Pocket System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2104 - Peters Pocket Tract - Unit 1, Haas Slough (PTR1)	RD 2104 - Peters Pocket Tract - Unit 2, Cache Slough (PTR2)						
General	Operations and Maintenance Manuals	A	A						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M	M						
	Closure Structures	NA	NA						
	Slope Stability	M	U						
	Erosion/Bank Caving	U	M						
	Animal Control	M	M						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	U	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	NA	NA						
	Revetments other than Riprap	NA	NA						
	Seepage	M	M						

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

OCT 18 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 0070 and RD 1660 – Sutter Basin North Levee System from January 17, 2012 and February 2, 2012. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of five segment listed in the Report Card.

Based on observations made as part of the inspection, RD 0070 and RD 1660 – Sutter Basin North Levee System is rated unacceptable because of encroachments, erosion/bank caving, cracking, animal control and seepage (shown in red on the Report Card). Red issues cause the system to become inactive immediately. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, sod cover, slope stability, depression/rutting and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items are not likely to prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 rehabilitation program. Based on the information available at this time, the system has an inactive status in the PL 84-99 rehabilitation program and is no longer eligible for assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sutter County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell for
Colonel, U.S. Army
District Commander

BRADEN LEMASTER
LTC EN
DEPUTY CDR

Enclosures

RD 0070 and RD 1660 - Sutter Basin North Levee System
Unacceptable - Inactive

	RD 0070 - Meridian - Unit 1, Butte Slough (MRD1)	RD 0070 - Meridian - Unit 2, Sacramento River (MRD2)	RD 1660 - Tisdale - Unit 1, Sacramento River (TIS1)	RD 1660 - Tisdale - Unit 2, Sutter Bypass (TIS2)	Tisdale Bypass - Unit 1, North Levee (TBP1)
General Items					
Operations and Maintenance Manuals	M	M	M	M	M
Emergency Supplies and Equipment	A	A	A	A	A
Flood Preparedness and Training	A	A	A	A	A
Levee Embankment Items					
Unwanted Vegetation Growth	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U
Sod Cover	🟨 U	🟨 U	M	🟨 U	M
Encroachments	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U
Closure Structures	N/A	N/A	N/A	N/A	N/A
Slope Stability	🟨 U	M	🟨 U	🟨 U	A
Erosion/Bank Caving	🟥 U	🟨 U	🟨 U	🟥 U	M
Settlement	A	A	A	A	A
Depressions/Rutting	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U
Cracking	A	M	A	🟥 U	🟨 U
Animal Control	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A
Riprap Revetments & Bank Protection	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U
Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A
Seepage	M	🟥 U	🟥 U	M	M

Segment & System Ratings/PL 84-99 Eligibility

🟥 Likely Prevents Performance In Next Flood Event

🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe

🟨 Not Likely to Prevent Performance In Next Flood Event

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

June 8, 2012 (Updated August 7, 2013)

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

RD 0070 and RD 1660 – Sutter Basin North Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation’s flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>RD 0070 and 1660 – Sutter Basin North Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000544
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>RD 0070 – Meridian - Unit 1, Butte Slough (MRD1)</td><td>5204000672</td><td>U</td></tr>
<tr><td>RD 0070 – Meridian - Unit 2, Sacramento River (MRD2)</td><td>5204000671</td><td>U</td></tr>
<tr><td>RD 1660 – Tisdale - Unit 1, Sacramento River (TIS1)</td><td>5204000961</td><td>U</td></tr>
<tr><td>RD 1660 – Tisdale - Unit 2, Sutter Bypass (TIS2)</td><td>5204000962</td><td>U</td></tr>
<tr><td>Tisdale Bypass – Unit 1, North Levee (TBP1)</td><td>5204001081</td><td>U</td></tr>
</table>
</td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System</td><td>Assigned Rating: Unacceptable</td></tr>
</table>

Rating	
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive
Preparing Agency Name	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety.   The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosures 1 through 5, Appendices C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting.
Refer to Enclosures 1 through 5, Appendices C for a list of Unacceptable items.

The Report Card and the List of Unacceptable Rated Items was updated in August 2013 based on comments and additional information provided by the Local Maintaining Agencies (LMAs). This resulted in the coding of some individual items being changed from Red (likely to Prevent Performance in Next Flood Event) to Yellow (Not Likely to Prevent Performance in Next Flood Event). The Inspection Checklists in Appendix C of the report were not updated.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-571.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick Poeppelman, P.E.
Levee Safety Officer

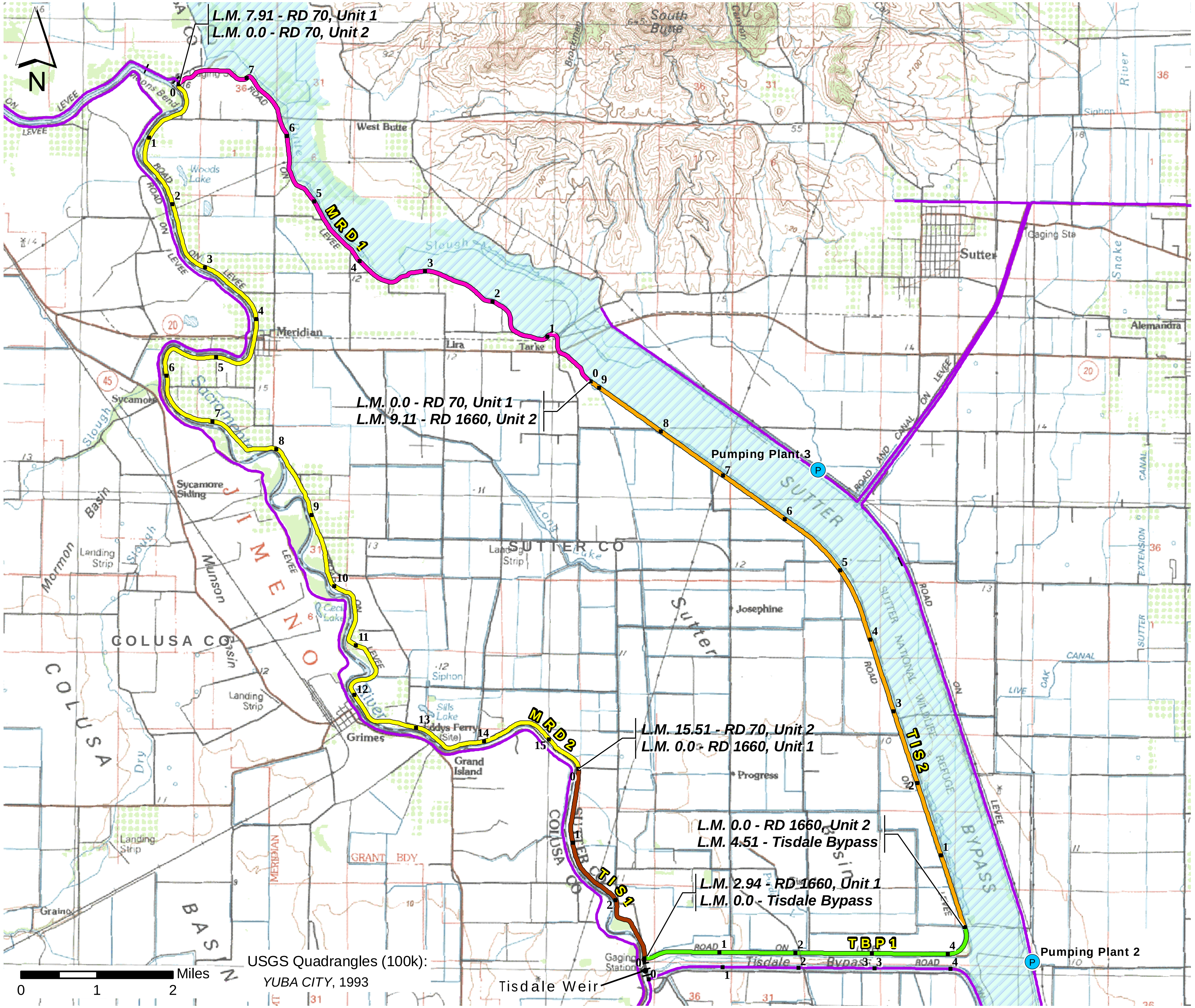
cc:

CO-E

CO-OR

ED

ED-G



L.M. 7.91 - RD 70, Unit 1
L.M. 0.0 - RD 70, Unit 2

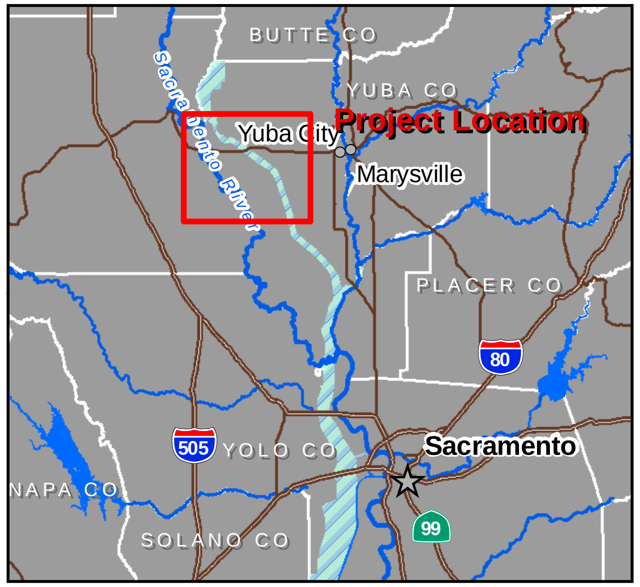
L.M. 0.0 - RD 70, Unit 1
L.M. 9.11 - RD 1660, Unit 2

L.M. 15.51 - RD 70, Unit 2
L.M. 0.0 - RD 1660, Unit 1

L.M. 0.0 - RD 1660, Unit 2
L.M. 4.51 - Tisdale Bypass

L.M. 2.94 - RD 1660, Unit 1
L.M. 0.0 - Tisdale Bypass

USGS Quadrangles (100k):
YUBA CITY, 1993



Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

- RD 70 - Unit 1, Butte Slough (MRD1)
- RD 70 - Unit 2, Sacramento River (MRD2)
- RD 1660 - Unit 1, Sacramento River (TIS1)
- RD 1660 - Unit 2, Sutter Bypass (TIS2)
- Tisdale Bypass - Unit 1, north levee (TBP1)
- Other Federal Levees
- Flood Control Structure
- P Pump Station
- ▪ Levee Mile
- ▨ Sutter Bypass

FEDERAL LEVEE PROJECTS
LOCATION MAP

RD 70 - RD 1660

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAR 13 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

RECEIVED
APR 0 3 2012

Dear Mr. Punia:

This is in response to your December 7, 2011, letter requesting a re-inspection of the Reclamation District 404 – Boggs Tract levee system based on corrective actions made by the local maintaining agency to remedy issues identified during the periodic inspection. On January 17, 2012, the U.S. Army Corps of Engineers (USACE) conducted a re-inspection of some unacceptable deficiencies identified during the Reclamation District 404 – Boggs Tract Periodic Inspection. Ryan Larson, Jesse Hogan, Bob Murakami, and Gene Vaughan of USACE staff, Richard Willoughby and Michael Wright of the Central Valley Flood Protection Board staff, and Bill Darsie of KSN attended the re-inspection. The system is comprised of three segments, however, only two needed to be re-inspected. A revised Report Card and photos of the before and after condition are enclosed and serve as a summary of the findings.

System: Reclamation District 404 – Boggs Tract
Segment: RD 0404 – Boggs Tract - Unit 1, San Joaquin River right bank
RD 0404 – Boggs Tract - Unit 2, French Camp-Walker Slough right bank
Duck Creek – Walker Slough right bank at I-5 (not re-inspected)

The system rating is determined based solely on the USACE inspection checklist. However, due to the California Central Valley Flood System Improvement Framework (Framework), the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework.

The slope stability issues identified during the periodic inspection have been repaired to at least a minimally acceptable condition. One settlement point identified during the periodic inspection (BOG1_2009_a_0039) appears to be related to a pipe installed thru the levee and will be categorized as an encroachment issue for the future. The local maintaining agency demonstrated that the settlement site upstream of the railroad tracks (BOG1_2009_a_0066) has enough height to contain the design water surface. Maintenance should still be done in this area to bring the levee to the as-constructed lines and grade. There was still evidence of rodent holes on the levees which indicates the rodent control program needs improvement, but we did identify several rodent bait stations on or near the levee to indicate the local maintaining agency is taking steps to control the rodents.

Based on observations made as part of the re-inspection, the RD 404 – Boggs Tract system remains unacceptable because of encroachments and erosion/bank caving (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that the encroachment and erosion/bank caving issues could prevent the system from performing as intended during the next flood event. These items should be addressed in accordance with the Framework. The RD 404 – Boggs Tract system is active for PL 84-99 rehabilitation assistance effective December 7, 2011.

The following items continue to be unacceptable, but an engineering determination concluded that these issues would not prevent the system from performing during the next flood event: vegetation, settlement, depressions and rutting, animal control, and riprap revetments and bank protection (shown in purple and yellow on attached report card). Maintenance of all purple items should be conducted in accordance with the Framework. A system-wide vegetation control program should be implemented in accordance with USACE standards and any applicable law or regulations that may govern. Maintenance of all yellow items must be completed by September 10, 2012, two years from the date of the original letter transmitting the results of the Periodic Inspection to bring these items to at least a minimally acceptable condition or the items will be noted as pink during the next inspection and will cause the system to become inactive.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board is responsible for addressing issues affecting flood fighting activities or levee integrity. A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the RD 404 – Boggs Tract system will no longer be eligible for PL 84-99 rehabilitation assistance.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items. These maintenance activities have improved the overall condition of the system. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and the Congressional delegation as required by our regulations.

Sincerely,

William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosures

Photo 1. Rodent hole in the landside levee slope of RD 404, Unit 2.

Photo 2. 2009 Periodic Inspection finding: Waterside slope is approximately 1.5H:1V with erosion, rutting, and rilling causing settlement. Erosion protection on slope is inadequate. BOG2_2009_a_0003.

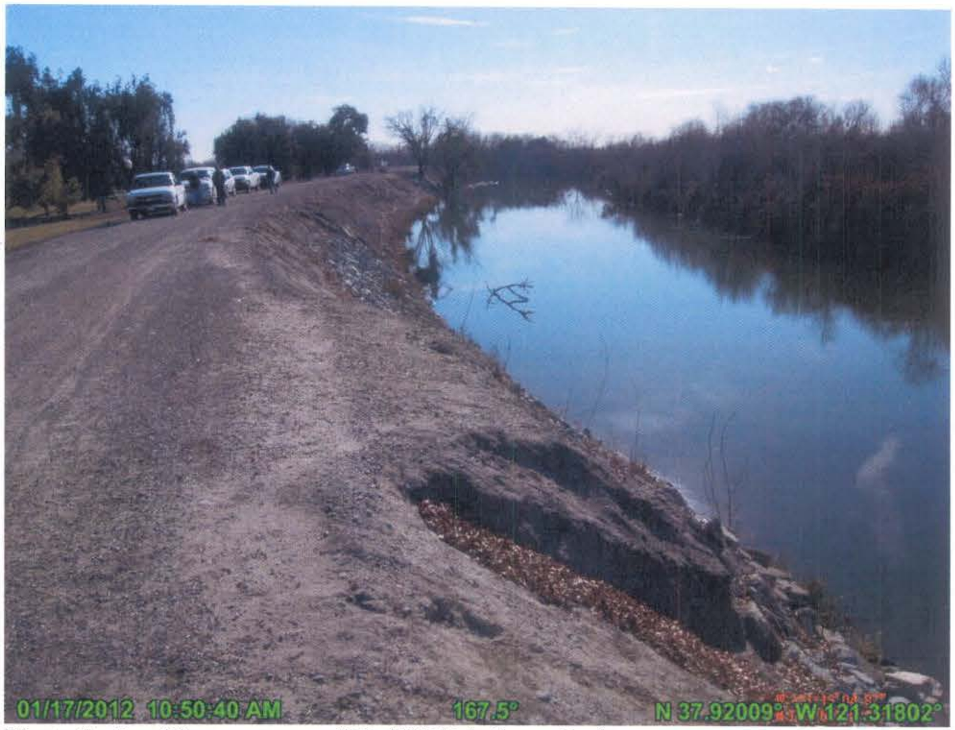


Photo 3. Looking upstream RD 404 Unit 2 repair site.

Photo 4. Looking downstream RD 404 Unit 2 repair site.

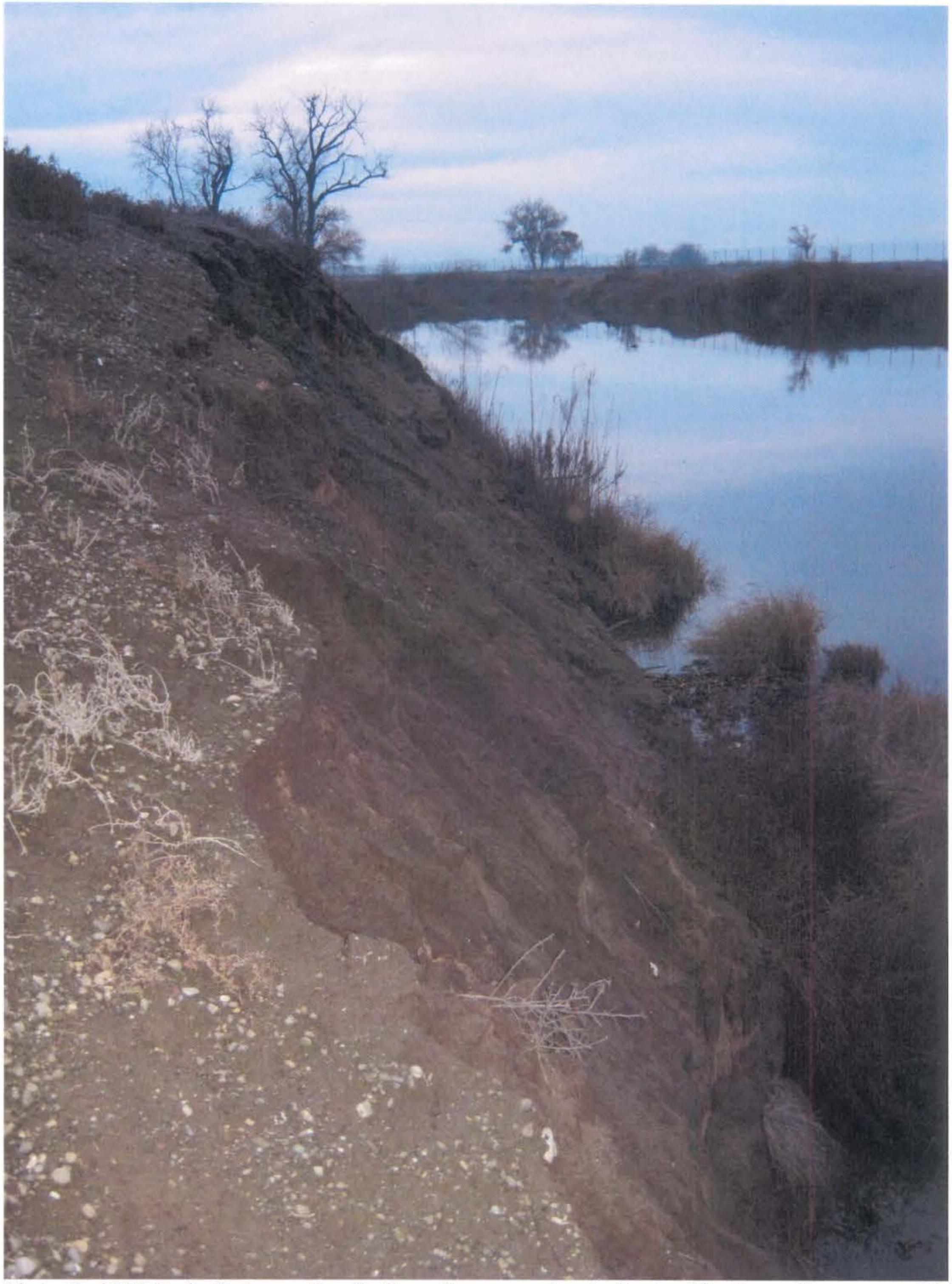


Photo 5. 2009 Periodic Inspection finding: Severe washout of waterside slope. Scarp up to 12-feet high and near vertical. BOG1_2009_a_0069.

Photo 6. Looking downstream RD 404 Unit 1 repair site.

Photo 7. Drainage pipe in levee slope of RD 404 Unit 1 repair site.

Photo 8. Looking upstream RD 404 Unit 1 repair site.

Photo 9. Rodent holes in RD 404 Unit 1 landside slope.

Photo 10. 2009 Periodic Inspection finding: Sink hole in the levee access ramp from the City of Stockton Regional Wastewater Control Facility. BOG1_2009_a_0038

Photo 11. Gravel filled sink hole.

Photo 12. Settlement at the upstream end of the railroad tracks. The bottom of the dip in the crown is above the design water surface elevation. BOG1_2009_a_0066. There has been no change in this location since the original inspection.

RD 404 and Duck Creek right bank - Boggs Tract Unacceptable- Active	RD 404 - Unit 1 San Joaquin River Right Bank	RD 404 - Unit 2, French Camp Walker Slough	Duck Creek - Walker Slough right bank						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	M	M	M						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	N/A	N/A	N/A						
Encroachments	U	U	U						
Closure Structures	N/A	N/A	N/A						
Slope Stability	M	M	M						
Erosion/Bank Caving	U	U	M						
Settlement	U	A	A						
Depressions/Rutting	M	U	A						
Cracking	A	A	A						
Animal Control	U	U	M						
Culverts/Discharge Pipes	N/A	N/A	N/A						
Riprap Revetments & Bank Protection	U	N/A	M						
Revetments other than Riprap	N/A	N/A	N/A						
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A						
Seepage	A	M	A						

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Likely Prevents Performance In Next Flood Event (Framework)

Not Likely to Prevent Performance In Next Flood Event

Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

02/22/12

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

OCT 10 2014

REPLY TO
ATTENTION OF

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 1600, 0827, 0785 and 0537 – Sac-Yolo North Levee System between July 8, 2013 – August 19, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of nine segments listed in the Report Card.

Based on observations made as part of the inspection, the RD 1600, 0827, 0785 and 0537 – Sac-Yolo North Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, slope stability, erosion/bank caving, animal control, sod cover, depressions/rutting, cracking, riprap revetments and bank protection, and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 1600, 0827, 0785 and 0537 – Sac-Yolo North Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: RD 1600, 0827, 0785, and 0537 - SacYolo North Levee System System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	RD 0537 - Lovdal - Unit 1, Sacramento River north of Sac Bypass (LOVN)	RD 0785 - Driver - Unit 1, Sacramento River (DRV1)	RD 0785 - Unit 2, Yolo Bypass (DRV2)	RD 0827 - Elkhorn - Unit 1, Sacramento River (ELK1)	RD 0827 - Elkhorn - Unit 2, Yolo Bypass (ELK2)	RD 1600 - Mull - Unit 1, Sacramento River (MUL1)	RD 1600 - Mull - Unit 2, Yolo Bypass (MUL2)	Sacramento Bypass - Unit 1, North Levee (SAC1)	Yolo Bypass - East Levee (YBEL)
General	Operations and Maintenance Manuals	A	A	A	A	A	A	A	A	A
	Emergency Supplies and Equipment	M	M	M	M	M	M	M	A	A
	Flood Preparedness and Training	M	M	M	M	M	M	M	M	M
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U	🟥 U	🟨 M	🟨 M	🟥 U	🟥 U	🟥 U	🟥 U	🟨 M
	Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Slope Stability	🟥 U	M	🟥 U	M	🟥 U	🟨 M	🟥 U	M	A
	Erosion/Bank Caving	🟥 U	🟥 U	🟥 U	M	🟨 M	🟥 U	🟥 U	M	A
	Animal Control	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	M	🟥 U
	Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Levee Embankments - Other Items	Vegetation Growth	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M
	Sod Cover	🟥 U	🟨 M	M	M	🟨 M	🟥 U	M	🟨 M	M
	Settlement	A	A	🟨 M	A	🟨 M	🟨 M	🟨 M	🟨 M	🟨 M
	Depressions/Rutting	🟨 M	🟥 U	🟨 M	M	M	🟨 M	🟨 M	🟨 M	A
	Cracking	A	A	🟥 U	A	🟥 U	A	🟥 U	🟨 M	A
	Riprap Revetments & Bank Protection	🟨 M	🟥 U	🟥 U	🟨 M	🟨 M	🟨 M	🟨 M	M	M
	Revetments other than Riprap	M	N/A	N/A	N/A	N/A	N/A	N/A	M	N/A
	Seepage	A	M	M	🟨 M	M	🟥 U	M	M	M

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected
🟥 U	Likely prevents performance in next flood event

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JUN 24 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the RD 1601 – Twitchell Island Levee System on April 10, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the RD 1601 – Twitchell Island Levee System is rated Minimally Acceptable. Encroachments and settlement observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

During the comment period for this report, the local maintaining agency provided vacuum test results for the irrigation pipes through the levee in lieu of video inspections or annual pressure tests against a baseline. We have not reviewed the applicability and suitability of vacuum testing as an alternative to video inspection or annual pressure testing for fluid carrying pipes through levees. We have identified those irrigation pipes as yellow observations in this report and look forward to working with your staff over the next two years to better understand vacuum testing of pipes to determine if this will be an acceptable method of testing pipe integrity.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the RD 1601 – Twitchell Island Levee System is active in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety

issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable USACE inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sacramento County Office of Emergency Services, California Office of Emergency Services, and FEMA Region IX as required by our regulations.

Sincerely,

For Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

System: RD 1601 - Twitchell Island
System Rating: Minimally Acceptable
Approved SWIF/LOI: No
Pl 84-99 RP Eligibility: Active

		RD 1601 - Twitchell (TWIT)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	M							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	A							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUN 13 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the RD 2060 – Hastings Tract Levee System was conducted from January 26 to February 9, 2012. The system is comprised of three segments.

System: RD 2060 – Hastings Tract Levee System
Hastings – Unit 1, Lindsey Slough
Hastings – Unit 2, West Levee
Hastings – Unit 3, Cache Slough

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, RD 2060 – Hastings Tract Levee System is rated unacceptable because of encroachments, slope stability, erosion/bank caving and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, depression/rutting, cracking and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Solano County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

for
BRANDEN LEMASKIN
LTC EN
DPTY CDR

Enclosures

RD 2060 - Hastings Tract
Unacceptable - Inactive

	Hastings - Unit 1, Lindsey Slough (HST1)	Hastings - Unit 2, west levee (HST2)	Hastings - Unit 3, Cache Slough (HST3)
General Items			
Operations and Maintenance Manuals	A	A	A
Emergency Supplies and Equipment	A	A	A
Flood Preparedness and Training	A	A	A
Levee Embankment Items			
Vegetation Growth	U	U	U
Sod Cover	M	A	M
Encroachments	U	U	U
Closure Structures	N/A	N/A	N/A
Slope Stability	U	U	U
Erosion/Bank Caving	U	U	U
Settlement	M	A	A
Depressions/Rutting	U	U	U
Cracking	U	U	U
Animal Control	U	U	U
Culverts/Discharge Pipes	N/A	N/A	N/A
Riprap Revetments & Bank Protection	U	N/A	U
Revetments other than Riprap	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A
Seepage	A	M	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event

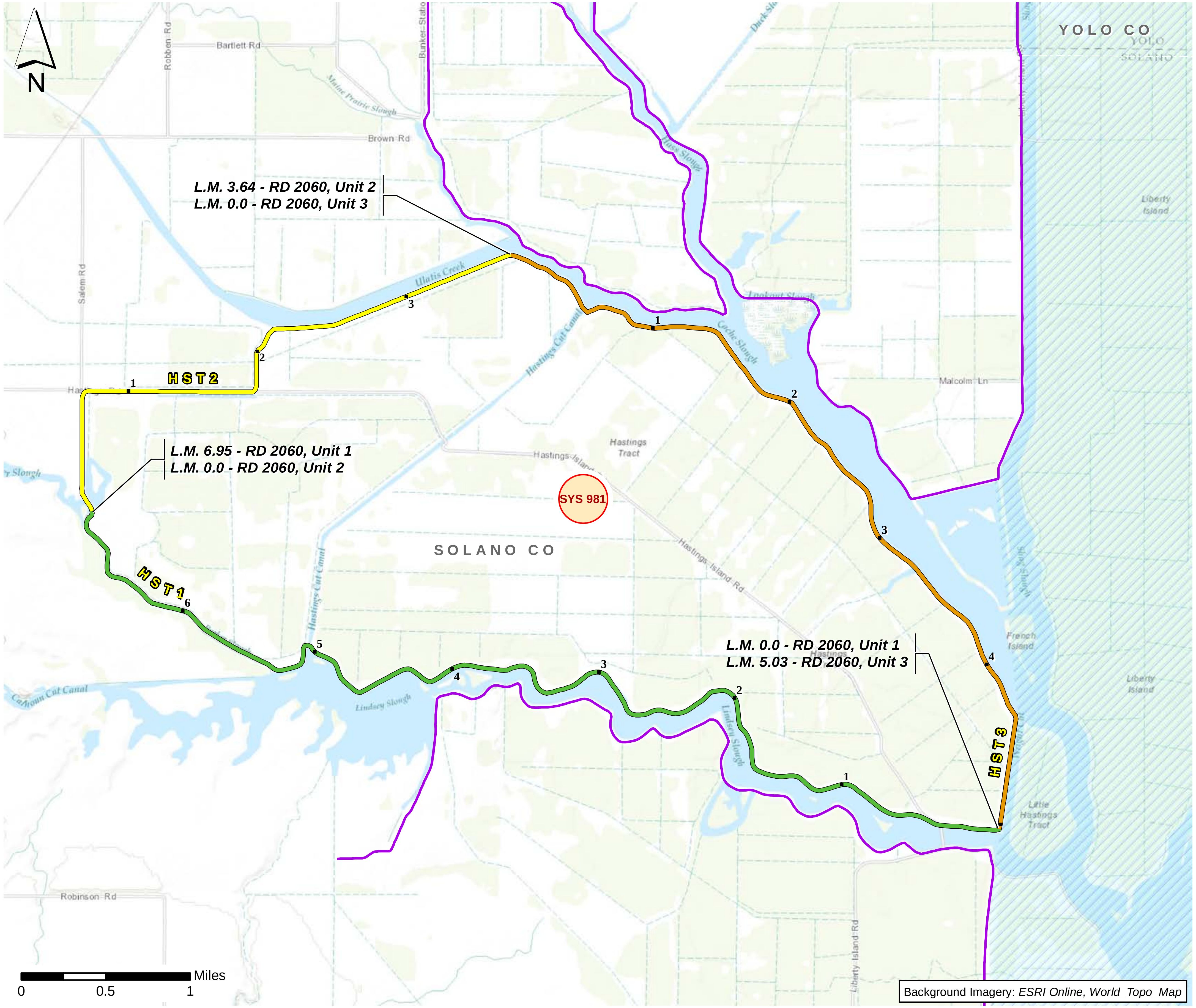
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

5/31/2012

Rev - 9/26/2012



Background Imagery: *ESRI Online, World_Topo_Map*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 981

- RD 2060 - Unit 1, Lindsey Slough (HST1)
- RD 2060 - Unit 2, west levee (HST2)
- RD 2060 - Unit 3, Cache Slough (HST3)
- Other Federal Levees
- ▨ Yolo Bypass
- ▪ Levee Mile

FEDERAL LEVEE PROJECTS
SYSTEM MAP

RD 2060 - HASTINGS TRACT
SYSTEM 0981

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

MAY 2012

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 8 - 2013

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Sacramento River East Levee – LD3 Glenn County Levee System was conducted between July 19, 2011 and August 3, 2011. The system is comprised of nine segments.

System: Sacramento River East Levee – LD3 Glenn County
Segments: LD3 – Glenn County, Project Unit 138 (LD3A)
LD3 – Glenn County, Project Unit 136 (LD3B)
Sacramento River East Levee – Unit 1 north, Sacramento River Above Moulton Weir (SE1A)
Sacramento River East Levee – Unit 1, Sacramento River Moulton Weir to Colusa Weir (SE1B)
Sacramento River East Levee – Unit 1, south, Sacramento River below Colusa Weir (SE1C)
Sacramento River East Levee – Unit 2, Colusa Weir left bank (SE02)

	Sacramento River East Levee – Unit 3, Colusa Weir right bank (SE03)
	Sacramento River East Levee – Unit 4, Moulton Weir left bank (SE04)
	Sacramento River East Levee – Unit 5, Moulton Weir right bank (SE05)

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for unacceptable rated items:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 Rehabilitation Assistance Eligibility.			

Based on observations made as part of the inspection, Sacramento River East Levee – LD3 Glenn County is rated unacceptable because of sod cover, encroachments, slope stability, erosion/bank caving, depressions/rutting, cracking and animal control (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation, and riprap revetments were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event (shown in yellow on the Report Card). A system-wide vegetation control program should be implemented in accordance with USACE standards, and any applicable law or regulations that may govern. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include Federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 557-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Glenn County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E. FOR / DARREN LEMASTER
Colonel, U.S. Army LTC, EN
District Commander DPTY CDR

Enclosures

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Sacramento River East Levee – LD3 Glenn County Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

Project Name	Sacramento River East Levee – LD3 Glenn County Levee System
National Levee Database (NLD) System Identification	NLD System ID: 5205000541

Segment Name	NLD Segment ID	Segment Rating
LD 3 – Glenn County, Project Unit 138 (LD3A)	5204000541	U
LD 3 – Glenn County, Project Unit 136 (LD3B)	5204000542	U
Sacramento River East Levee – Unit 1 north, Sacramento River Above Moulton Weir (SE1A)	5204001051	U
Sacramento River East Levee – Unit 1, Sacramento River Moulton Weir to Colusa Weir (SE1B)	5204001052	U
Sacramento River East Levee – Unit 1 south, Sacramento River	5204001053	U

	below Colusa Weir (SE1C)		
	Sacramento River East Levee – Unit 2, Colusa Weir left bank (SE02)	5204001056	M
	Sacramento River East Levee – Unit 3, Colusa Weir right bank (SE03)	5204001057	M
	Sacramento River East Levee – Unit 4, Moulton Weir left bank (SE04)	5204001054	M
	Sacramento River East Levee – Unit 5, Moulton Weir right bank (SE05)	5204001055	U
USACE Division/District	South Pacific Division / Sacramento District		
USACE Assigned System Rating	Assigned Rating: Unacceptable		
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive		
Preparing Contractor Name and Address	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833		

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the “General Instructions for the Inspection of Flood Damage Reduction Segments/Systems” as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated “Unacceptable” which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosures 1 through 9, Appendices C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated “Unacceptable” which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner. Point 182 in Unit 1 South, Sacramento River Below Colusa Weir was initially rated as Slope Stability but after further review it has been changed to an Encroachment point.
Refer to Enclosures 1 through 9, Appendices C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

Sacramento River East Levee - LD3
Glenn County
Unacceptable - Inactive

	LD3 - Glenn County, Project Unit 138 (LD3A)	LD3 - Glenn County, Project Unit 136 (LD3B)	Sacramento River East Levee - Unit 1 north, Sacramento River above Moulton Weir (SE1A)	Sacramento River East Levee - Unit 1, Sacramento River Moulton Weir to Colusa Weir (SE1B)	Sacramento River East Levee - Unit 1 south, Sacramento River below Colusa Weir (SE1C)	Sacramento River East Levee - Unit 2, Colusa Weir left bank (SE02)	Sacramento River East Levee - Unit 3, Colusa Weir right bank (SE03)	Sacramento River East Levee - Unit 4, Moulton Weir left bank (SE04)	Sacramento River East Levee - Unit 5, Moulton Weir right bank (SE05)	
GENERAL ITEMS										
Operations and Maintenance Manuals	A	M	M	M	M	M	M	M	M	
Emergency Supplies and Equipment	M	M	A	A	A	A	A	A	A	
Flood Preparedness and Training	M	M	A	A	A	A	A	A	A	
LEVEE EMBANKMENT ITEMS										
Vegetation Growth	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	
Sod Cover	🟨 U	A	🟨 U	🟨 U	🟥 U	A	M	A	🟨 U	
Encroachments	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	🟨 U	🟨 U	🟨 U	🟨 U	
Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Slope Stability	🟥 U	M	A	M	🟨 U	A	A	A	A	
Erosion/Bank Caving	🟥 U	A	M	🟥 U	🟥 U	A	🟨 U	M	A	
Settlement	A	A	A	A	A	A	A	A	A	
Depressions/Rutting	🟨 U	🟨 U	🟨 U	🟥 U	🟥 U	A	A	🟨 U	🟨 U	
Cracking	🟥 U	A	🟨 U	M	🟨 U	A	A	A	🟨 U	
Animal Control	🟥 U	🟥 U	🟥 U	🟥 U	🟥 U	🟨 U	🟨 U	🟨 U	🟥 U	
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Riprap Revetments & Bank Protection	A	🟨 U	A	🟨 U	🟨 U	🟨 U	🟨 U	🟨 U	N/A	
Revetments other than Riprap	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Seepage	M	A	A	M	M	A	A	A	A	

Segment & System Ratings/PL 84-99 Eligibility

🟥 Likely Prevents Performance In Next Flood Event
🟪 Serious deficiency noted in past inspections has not been corrected within the established timeframe
🟨 Not Likely to Prevent Performance In Next Flood Event

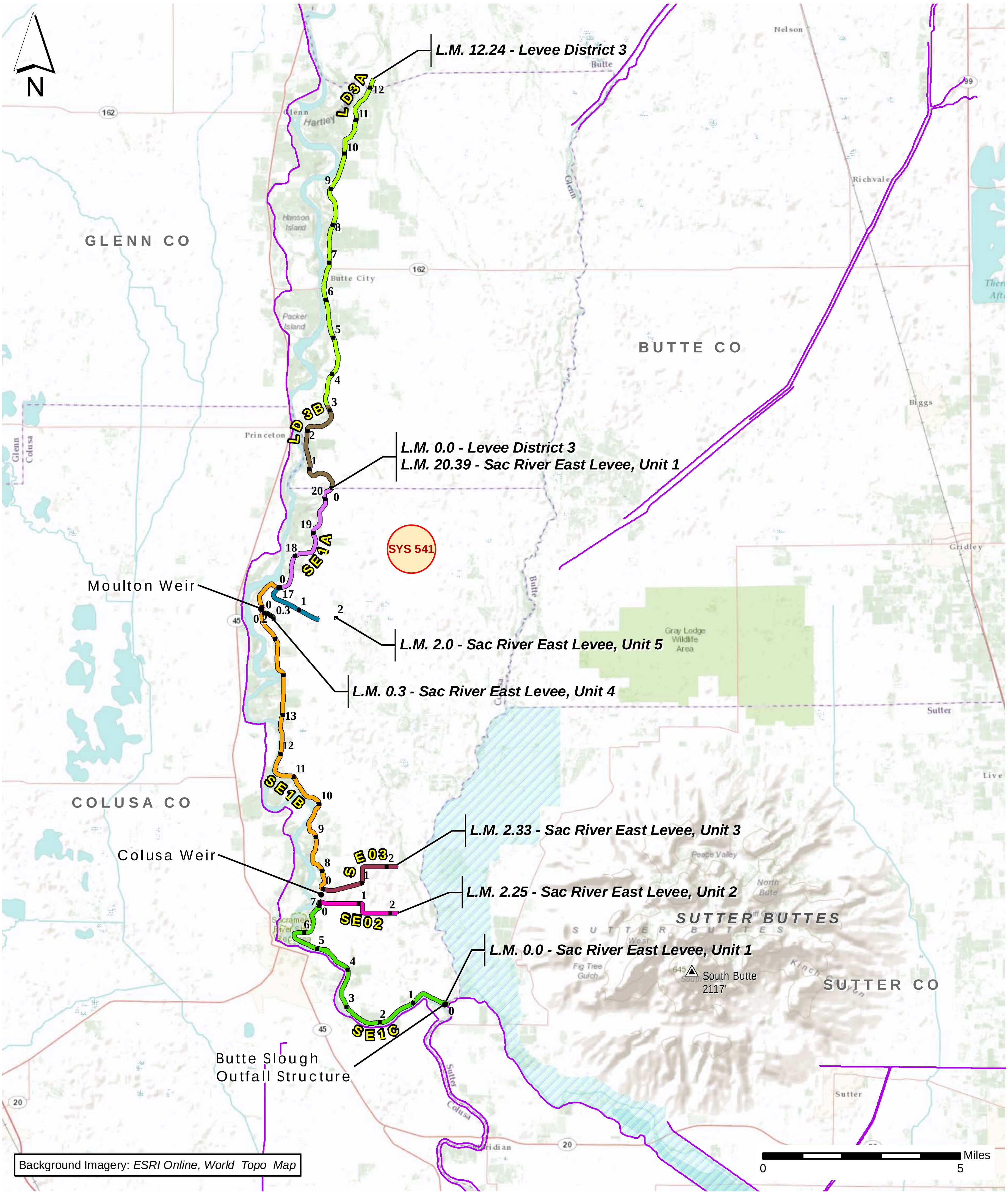
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

11/29/2011
Rev - 10/9/2012

Map Prepared by Jim Mars



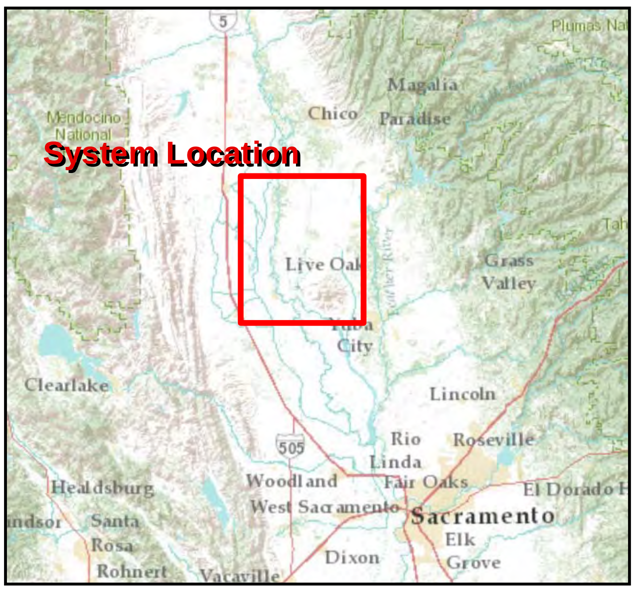
Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS

(Levee Inspection System Code)

Levee Segments

- LD 3 - Project Unit 138 (LD3A)
- LD 3 - Project Unit 136 (LD3B)
- Unit 1 north - Sac River East Levee, abv Moulton Weir (SE1A)
- Unit 1 - Sac River East Levee, Moulton Weir to Colusa Weir (SE1B)
- Unit 1 south - Sac River East Levee, blw Colusa Weir (SE1C)
- Unit 2 - Sac River East Levee, Colusa Weir left bank (SE02)
- Unit 3 - Sac River East Levee, Colusa Weir right bank (SE03)
- Unit 4 - Sac River East Levee, Moulton Weir left bank (SE04)
- Unit 5 - Sac River East Levee, Moulton Weir right bank (SE05)
- Other Federal Levees
- ▨ Sutter Bypass
- ■ Levee Mile



SACRAMENTO RIVER EAST - LD 3 PROTECTION AREA

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FEDERAL LEVEE PROJECTS
SYSTEM MAP

APR 2012

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

REPLY TO
ATTENTION OF

APR 3 - 2013

Operations and Readiness Branch

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter - Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008. Periodic Inspections of the flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition and safety. The attached Periodic Inspection Report, Addendum, and Report Card serve as a summary of the Periodic Inspection.

A Periodic Inspection for the Sacramento River West Bank Levee System was conducted between August 23, 2010 and September 10, 2010. The system is comprised of eight segments.

System: Sacramento River West Bank Levee System	
Segments:	Levee District 1 – Glenn County Right Bank Sacramento River (LD1G)
	Levee District 2 – Glenn County Right Bank Sacramento River (LD2G)
	Maintenance Area 01 – Right Bank Sacramento River (MA1C)
	Sacramento River West Side Levee District – Colusa Bridge to Tisdale Bypass (SWS2)
	Sacramento River West Side Levee District – Tisdale Bypass to Knights Landing Outfall Structure (SWS3)
	RD 0787 – Left Bank Colusa Drain (FAIR)
	RD 0108 – Left Bank Colusa Drain (RFRM)
	Maintenance Area 12 – Left Bank Colusa Drain (MA12)

The system rating is determined based on the USACE inspection checklist. The PI rating will replace the annual routine inspection rating for this year, and consequently is used to determine the status of the system in the PL 84-99 Rehabilitation and Inspection Program. The attached inspection report itemizes the issues that were noted during the inspection. The following color coding system was used for items rated unacceptable:

Rating	Rating Classification	Status	Time to Fix Before Becoming Inactive
U	Likely to prevent the system from performing as intended during the next flood event	Inactive	Red issues cause the system to become inactive immediately
U	Serious deficiency noted in a past inspection has not been corrected within the established timelines	Inactive	Pink issues have already exceeded previous timeline for repair, causing the system to become inactive immediately.
U	Not likely to prevent the system from performing as intended during the next flood event	Active	2 years from date of this letter unless otherwise specified
The worst rating is used to determine the overall segment and system ratings and PL 84-99 rehabilitation assistance eligibility.			

Based on observations made as part of the inspection, the Sacramento River West Bank Levee System is rated unacceptable because of sod cover, encroachments, slope stability, animal control, erosion/bank caving, cracking and seepage (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event and should be addressed immediately.

Vegetation, sod cover, encroachments, slope stability, erosion/bank caving, settlement, depressions/rutting, cracking, animal control, revetments other than riprap, riprap revetments and bank protection (shown in yellow on the Report Card) were determined to be unacceptable but an engineering determination concluded that these items would not prevent the system from performing as intended during the next flood event. Maintenance of the yellow items must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

When inspecting an encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

Based on the information available at this time, the system has an inactive status in the PL 84-99 Rehabilitation and Inspection Program. Effective immediately, the system is no longer eligible for PL 84-99 rehabilitation assistance following a disaster. The system will remain eligible to receive flood fighting assistance to protect life and property in the event state and local resources are overwhelmed during times of emergency.

When systems are placed in an inactive status, the status will remain inactive until the sponsors present USACE with sufficient documentation and evidence that the issue has been resolved. The project sponsor must improve the system rating to at least a minimally acceptable condition before the system's status can be changed to active. Once the necessary corrective actions have occurred, please contact the USACE to schedule an inspection. It is requested that an updated levee log and a map showing the right-of-way easement area be submitted before any re-inspection request.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Gary Kamei at (916) 55-6845. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Colusa County Office of Emergency Services, Yolo County Office of Emergency Services, Glenn County Office of Emergency Services, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

William J. Leady, P.E
Colonel, U.S. Army
District Commander

Enclosures

Sacramento River West Bank Levee System
Unacceptable - Inactive

	LD 1 - Glenn County - Right Bank Sacramento River (LD1G)	LD 2 - Glenn County - Right Bank Sacramento River (LD2G)	MA 01 - Right Bank Sacramento River (MA1C)	Sacramento River West Side L.D. - Colusa Bridge to Tisdale Bypass (SWS2)	Sacramento River West Side L.D. - Below Tisdale Bypass (SWS3)	RD 0787 - Fair - Left Bank Colusa Basin Drain (FAIR)	RD 0108 - River Farms - Left Bank Colusa Basin Drain (RFRM)	MA 12 - Left Bank Colusa Basin Drain (MA12)
General Items								
Operations and Maintenance Manuals	M	M	M	M	M	M	M	M
Emergency Supplies and Equipment	M	M	M	M	M	M	M	M
Flood Preparedness and Training	M	M	M	M	M	M	M	M
Levee Embankment Items								
Vegetation Growth	U	U	U	U	U	U	U	U
Sod Cover	U	U	U	U	U	U	N/A	M
Encroachments	U	U	U	U	U	U	U	U
Closure Structures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slope Stability	U	U	U	U	U	U	U	U
Erosion/Bank Caving	U	U	U	U	U	U	U	U
Settlement	U	A	A	U	A	U	U	A
Depressions/Rutting	U	U	U	U	U	U	M	U
Cracking	U	M	A	U	A	U	U	U
Animal Control	U	U	U	U	U	U	U	U
Culverts/Discharge Pipes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Riprap Revetments & Bank Protection	U	U	U	U	U	N/A	M	U
Revetments other than Riprap	U	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Underseepage Relief Wells/Toe Drainage Systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Seepage	A	A	A	A	U	A	U	A

Segment & System Ratings/PL 84-99 Eligibility

Likely Prevents Performance In Next Flood Event/Inactive

Serious deficiency noted in past inspections has not been corrected within the established timeframe

Not Likely to Prevent Performance In Next Flood Event/Active

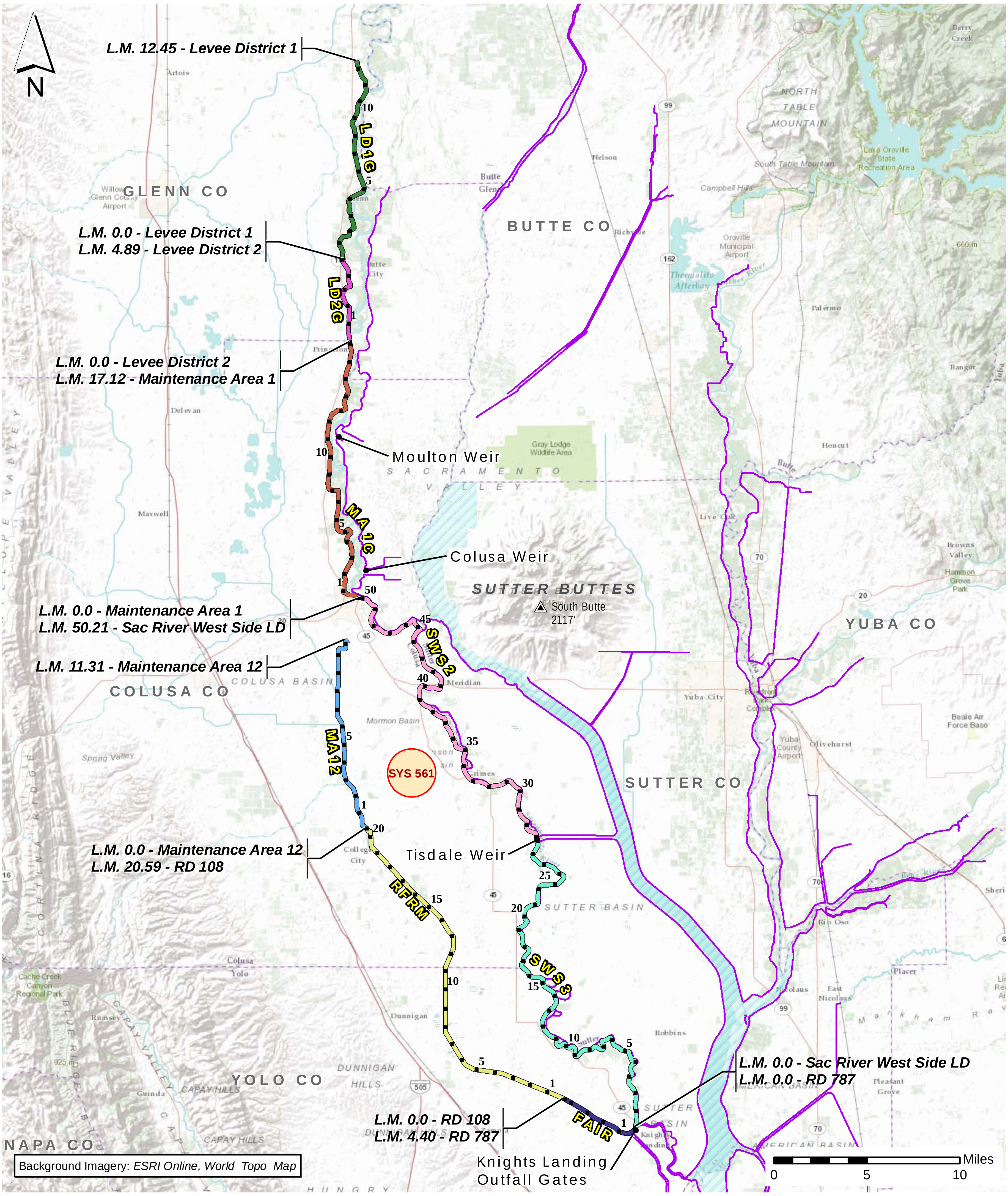
The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Eligibility

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

December 13, 2010

Map Prepared by Jim Mars

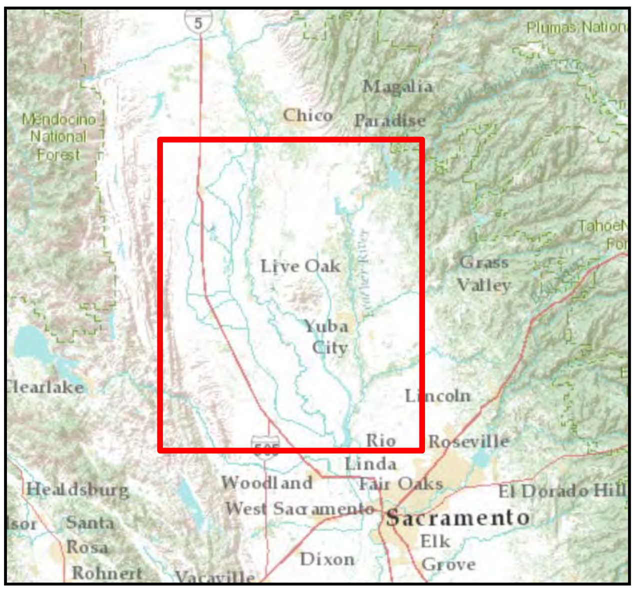


Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

Levee Segments

- Levee District 1 - Glenn County (LD1G)
- Levee District 2 - Glenn County (LD2G)
- Maintenance Area 01 (MA1C)
- Sac River West Side LD, Colusa Bridge to Tisdale Bypass (SWS2)
- Sac River West Side LD, below Tisdale Bypass (SWS3)
- RD 0787-Fair (FAIR)
- RD 0108-River Farms (RFRM)
- Maintenance Area 12 (MA12)
- Other Federal Levees
- ▨ Sutter Bypass
- ■ Levee Mile



SACRAMENTO RIVER WEST BANK

FEDERAL LEVEE PROJECTS
SYSTEM MAP

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

APR 2012

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Sacramento River West Bank Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation’s flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Sacramento River West Bank Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000561
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>LD 1 – Glenn County</td><td>5204000511</td><td>U</td></tr>
<tr><td>LD 2 – Glenn County</td><td>5204000531</td><td>U</td></tr>
<tr><td>Maintenance Area 01</td><td>5204000561</td><td>U</td></tr>
<tr><td>Sacramento River West Side L.D. – Colusa Bridge to Tisdale Bypass</td><td>5204001042</td><td>U</td></tr>
<tr><td>Sacramento River West Side L.D. – Below Tisdale Bypass</td><td>5204001041</td><td>U</td></tr>
<tr><td>RD 0787 – Fair</td><td>5204000861</td><td>U</td></tr>
<tr><td>RD 0108 – River Farms</td><td>5204000681</td><td>U</td></tr>
<tr><td>Maintenance Area 12</td><td>5204000621</td><td>U</td></tr>
</table>
</td></tr>
</table>

USACE Division/District	South Pacific Division / Sacramento District
USACE Assigned System Rating	Assigned Rating: Unacceptable
USACE Assigned PL 84-99 Rehabilitation Status	Assigned Status: Inactive
Preparing Contractor Name and Address	URS 2870 Gateway Oaks Drive, Suite 150 Sacramento, California 95833

System Rating is for continued Rehabilitation and Inspection Program (RIP) eligibility and generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein. Continuing eligibility in the Rehabilitation Inspection Program (RIP) is not impacted by the design criteria review.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies for continuing eligibility are based on the transmittal date.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but the System should perform as intended in the next flood event with historic levels of flood-fighting. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Enclosure 1, Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review and Quality Control/Assurance Reviews accomplished by the Architect/Engineer Contractor and the Quality Control/Assurance Reviews by USACE.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick Poeppleman, P.E.
Levee Safety Officer

cc:

CO-E

CO-OR

ED

ED-G

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUL 22 2014

Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Feather River – Hamilton – northeast of Afterbay Levee System on January 29, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Feather River – Hamilton – northeast of Afterbay Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, erosion/bank caving, and depressions/rutting. An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event (shown in red on the Report Card).

Animal control, vegetation, sod cover, and riprap revetments observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Feather River – Hamilton – northeast of Afterbay Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Butte County Office of Emergency Management, FEMA Region IX, and Congressman Doug LaMalfa's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Feather River - Hamilton - northeast of Afterbay System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Feather River - Hamilton West Levee - North of Afterbay Outflow Dam (HAM 2)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	🟥 U							
	Closure Structures	N/A							
	Slope Stability	M							
	Erosion/Bank Caving	🟥 U							
	Animal Control	🟨 M							
	Culverts/Discharge Pipes	N/A							
	Underseepage Relief Wells/Toe Drainage Systems	N/A							
Levee Embankments - Other Items	Vegetation Growth	🟨 M							
	Sod Cover	🟨 M							
	Settlement	A							
	Depressions/Rutting	🟥 U							
	Cracking	A							
	Riprap Revetments & Bank Protection	🟨 M							
	Revetments other than Riprap	N/A							
	Seepage	M							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

🟨 M	Includes Unacceptable observations not likely to prevent performance in next flood event
🟪 U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
🟥 U	Likely prevents performance in next flood event

The worst rating is used to determine the overall segment and system ratings. *denotes item used to determine PL 84-99 eligibility

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Feather River - Hamilton - northeast of Afterbay Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Feather River - Hamilton - northeast of Afterbay Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000471
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Feather River - Hamilton West Levee - north of Afterbay outflow dam (HAM2)</td><td>5204000471</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>Preparing Agency Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but these items should not prevent the System from performing as intended in the next flood event with historic levels of flood-fighting.
Refer to Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-583.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick Poeppelman, P.E.
Levee Safety Officer

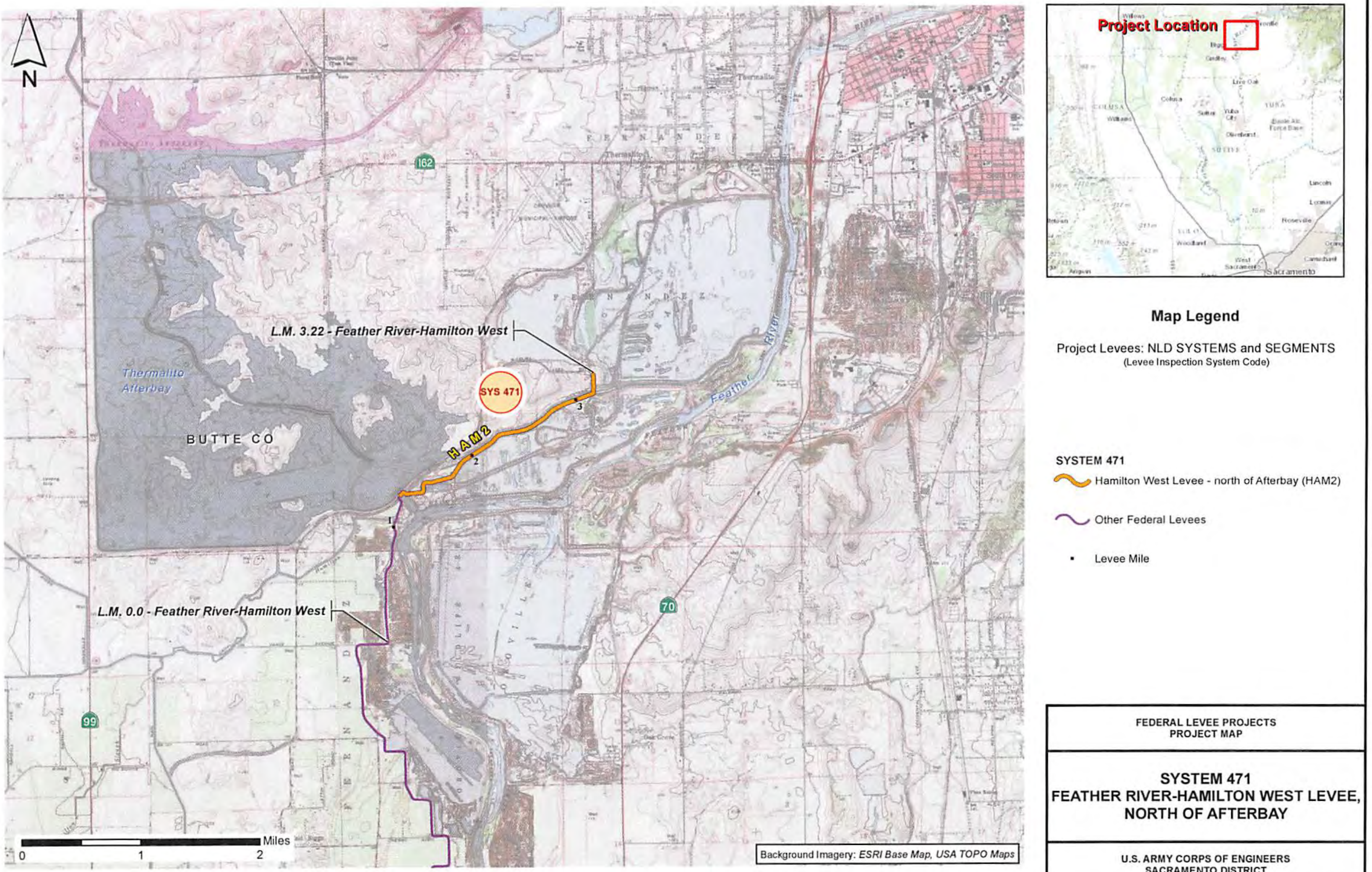
cc:

CO-E

CO-OR

ED

ED-G



Background Imagery: *ESRI Base Map, USA TOPO Maps*

Map Legend

Project Levees: NLD SYSTEMS and SEGMENTS
(Levee Inspection System Code)

SYSTEM 471

- Hamilton West Levee - north of Afterbay (HAM2)
- Other Federal Levees
- Levee Mile

FEDERAL LEVEE PROJECTS
PROJECT MAP

SYSTEM 471
FEATHER RIVER-HAMILTON WEST LEVEE, NORTH OF AFTERBAY

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

Map Prepared by Jim Mars

JAN 2013

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

JUL 22 2014

Operations and Readiness Branch

Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the Feather River – Nelson Bend West Levee System on January 29, 2013. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of one segment listed in the Report Card.

Based on observations made as part of the inspection, the Feather River – Nelson Bend West Levee System is rated Unacceptable. The unacceptable rating is due to insufficient animal control. An engineering determination, based upon visual inspection, concluded that this issue could prevent the system from performing as intended during the next flood event (shown in red on the Report Card).

Vegetation growth, sod cover, encroachments and riprap revetments observations were identified and considered unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the Feather River – Nelson Bend West Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation and evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety issue is

outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson (916) 557-7568 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Sutter County Office of Emergency Management, FEMA Region IX, and Congressman John Garamendi's office as required by our regulations.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: Feather River - Nelson Bend West Levee System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	Feather River – Nelson Bend West Levee (NBND)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M							
	Closure Structures	N/A							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	U							
	Culverts/Discharge Pipes	N/A							
	Underseepage Relief Wells/Toe Drainage Systems	N/A							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	N/A							
	Seepage	A							

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable
RP	Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)

M	Includes Unacceptable observations not likely to prevent performance in next flood event
U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Likely prevents performance in next flood event

ADDENDUM

Flood Damage Reduction Segment / System Inspection Report

Feather River - Nelson Bend West Levee System

The US Army Corps of Engineers (USACE) is executing Periodic Inspections (PI) of the nation's flood risk reduction systems in accordance with Policy Guidance Letter – Periodic Inspection Procedures for the Levee Safety Program, dated December 17, 2008.

The USACE Levee Safety Program mission is to assess the integrity and viability of flood risk reduction systems and recommend actions to assure that levee systems do not pose unacceptable risks to the public, property, and the environment. Periodic Inspections (PIs) of flood risk reduction systems are conducted to verify proper operation and maintenance; evaluate operational adequacy and structural stability; identify features to monitor over time; and improve the ability to communicate the overall condition.

The following system and segments were inspected as part of this periodic inspection.

<table>
<tr><td>Project Name</td><td>Feather River – Nelson Bend West Levee System</td></tr>
<tr><td>National Levee Database (NLD) System Identification</td><td>NLD System ID: 5205000481
<table>
<tr><th>Segment Name</th><th>NLD Segment ID</th><th>Segment Rating</th></tr>
<tr><td>Feather River – Nelson Bend West Levee (NBND)</td><td>5204000481</td><td>U</td></tr>
</table></td></tr>
<tr><td>USACE Division/District</td><td>South Pacific Division / Sacramento District</td></tr>
<tr><td>USACE Assigned System Rating</td><td>Assigned Rating: Unacceptable</td></tr>
<tr><td>Preparing Agency Name and Address</td><td>URS
2870 Gateway Oaks Drive, Suite 150
Sacramento, California 95833</td></tr>
</table>

System Rating generally reflects operation and maintenance requirements. Since significant advancement of the geotechnical, structural, hydrologic, hydraulic, electrical, and mechanical engineering fields may have occurred since initial construction, the original design criteria, when available, has been reviewed and compared to current engineering standards and practice. Any engineering design criteria changes that may have occurred since the system was constructed are documented herein.

Maintenance deficiencies noted on the inspection checklist portion of the report must be addressed by the appropriate local sponsor pursuant to specific item comments or the "General Instructions for the Inspection of Flood Damage Reduction Segments/Systems" as the normal routine inspection process would dictate. Transmittal of this document to the local sponsors constitutes notification of the inspection findings for the respective segments. Any noted timelines to address maintenance deficiencies are based on the transmittal date.

When inspecting the encroachment item, it was assumed that the encroachment was unpermitted unless documentation was submitted by the sponsor or was readily available in our files to show otherwise. If an encroachment is 1) permitted by the sponsor, 2) the USACE had no objection to the issuing of the permit and 3) it was constructed and is being maintained in accordance with the permit as well as the conditions in the USACE recommendation then that encroachment will receive a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

The Periodic Inspection has identified items rated "Unacceptable" which require immediate attention. The deficiencies identified have resulted in an Unacceptable System Rating and seriously impair the functioning of the flood damage reduction system and pose unacceptable risk to public safety. The sponsors should ensure these corrections are performed in an expedient manner.
Refer to Appendix C for a list of Unacceptable items.

The Periodic Inspection has also identified items rated "Unacceptable" which require immediate correction, but these items should not prevent the System from performing as intended in the next flood event with historic levels of flood-fighting.
Refer to Appendix C for a list of Unacceptable items.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE.

Technical review was performed on this periodic inspection report in accordance with established policy, principles and procedures. This includes the Independent Technical Review by USACE. For specific guidance on the vegetation-free zone, reference ETL 1110-2-583.

By my signature, I certify that the USACE Sacramento District has completed this Periodic Inspection Report and it complies with USACE guidance. All review comments have been satisfactorily resolved and the report has been revised accordingly.

Rick L. Poeppelman

Rick Poeppelman, P.E.
Levee Safety Officer

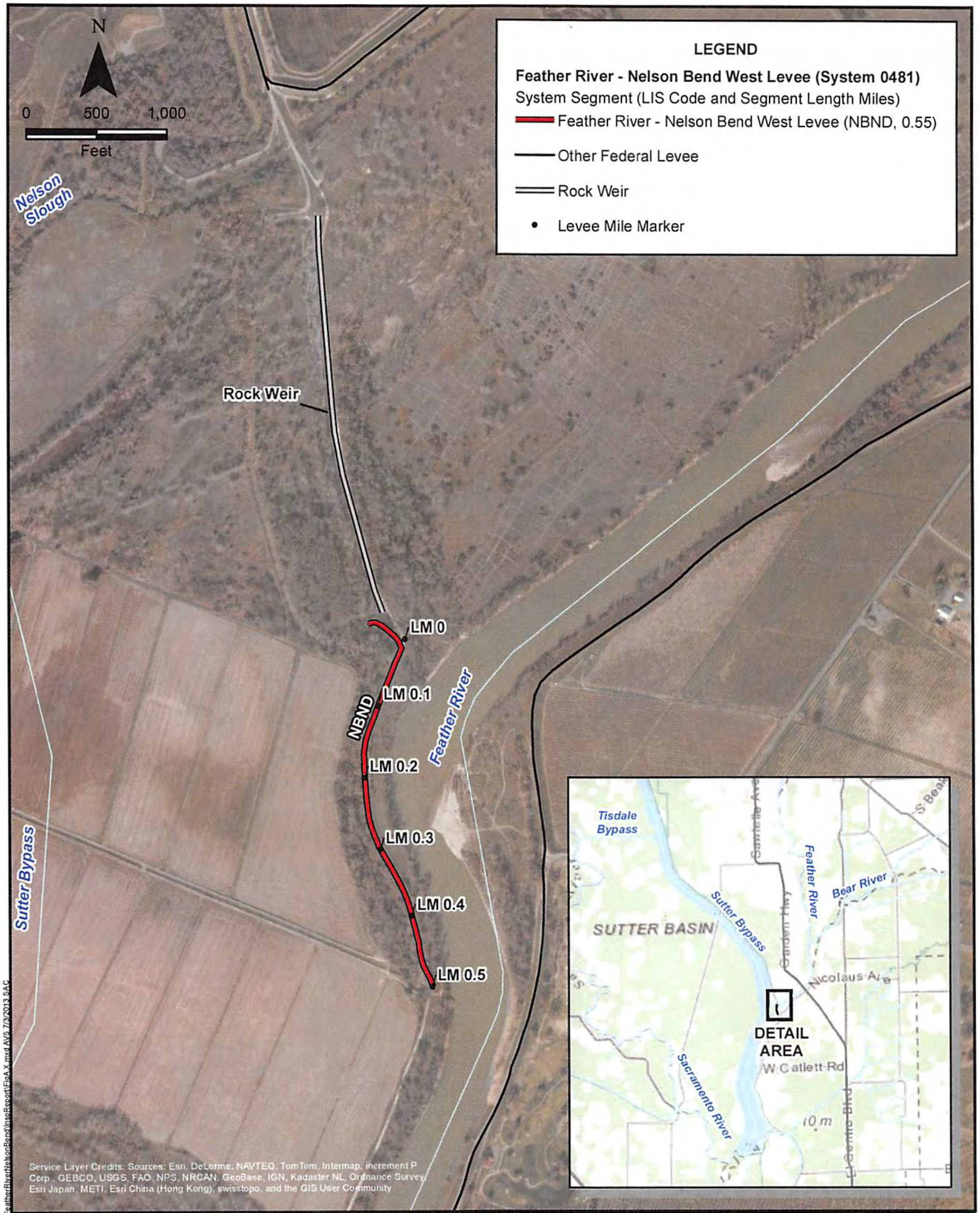
cc:

CO-E

CO-OR

ED

ED-G



L:\Projects\USACE\PI\ArcMaps\FeatherRiverNelsonBend\InspReport\FigA X.mxd AVS 7/3/2013 SAC

URS	US Army Corps of Engineers	Segment NBND Location Map	Figure A.1
		USACE Periodic Inspection URS Project Number 17326913	

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 13 2011

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

This is in response to your December 17, 2010 letter requesting a re-inspection of the San Joaquin River East levee system based on corrective actions made by the local maintaining agency to remedy issues identified during the periodic inspection. On February 8, 2011, the U.S. Army Corps of Engineers (USACE) conducted a re-inspection of some unacceptable deficiencies identified during the RD 0017, 2094, 2096, 2075, 2064 – San Joaquin River East Periodic Inspection. Ryan Larson and Jesse Hogan of USACE staff, Alison Tang of the Central Valley Flood Protection Board staff, Herman Phillips of the Department of Water Resources, Chuck McCabe of RD 2096, and Robert Winters of KSN attended the reinspection. The system is comprised of eight segments. A revised Report Card and photos of the before and after condition are enclosed and serve as a summary of the findings.

System: RD 0017, 2094, 2096, 2075, 2064 - SJ River East
Segment: RD 0017 - Mossdale - Unit 1, French Camp-Walker Slough left bank
RD 0017 - Mossdale - Unit 2, San Joaquin River right bank
RD 2064 - River Junction - Unit 1, San Joaquin River right bank
RD 2064 - River Junction - Unit 2, Stanislaus River right bank
RD 2075 - McMullin
RD 2094 - Walthall - Unit 1, San Joaquin River right bank
RD 2094 - Walthall - Unit 2, spur levee
RD 2096 - Wetherbee Lake

The system rating is determined based solely on the USACE inspection checklist. The pump station issue identified during the periodic inspection has been repaired to a minimally acceptable condition. The culvert/discharge pipes and depressions and rutting items have been improved such that an engineering determination, based on visual inspection, concluded these items would not prevent the system from performing as intended during the next flood event.

The following items were determined to be unacceptable but an engineering determination concluded that these issues would not prevent the system from performing as intended during the next flood event (therefore the unacceptable rating for these items does not affect the status for the PL 84-99, subject to the two year condition stated below): unwanted vegetation growth, depressions and rutting in RD 2064, and culverts/discharge pipes (shown in purple and yellow on the Report Card). Vegetation maintenance should be conducted in accordance with the California's Central Valley Flood System Improvement Framework (Framework). Maintenance of the depressions and rutting in RD 2064 and video inspection of the pipes associated with the Wetherbee Lake Pump Station must be completed no later than 2 years from the date of this letter to bring these items to at least a minimally acceptable condition.

Based on observations made as part of the re-inspection, the RD 0017, 2094, 2096, 2075, 2064 - SJ River East system remains unacceptable because of encroachments and erosion and bank caving (shown in orange on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues could prevent the system from performing as intended during the next flood event. However, due to the Framework, the active vs. inactive status in the PL 84-99 Rehabilitation and Inspection Program is determined based on conditions set forth in the Framework. Encroachment and erosion/bank caving maintenance should be conducted in accordance with the Framework. The RD 0017, 2094, 2096, 2075, 2064 - SJ River East system is active for PL 84-99 rehabilitation assistance effective December 17, 2010 because of the Framework and subject to a corrective action plan as described below.

In accordance with California's Central Valley Flood System Improvement Framework, Enforcement section, the Central Valley Flood Protection Board is responsible for addressing "encroachments affecting flood fighting activities or levee integrity." A corrective action plan shall be submitted to the Flood Protection and Navigation Section, attn: Mr. Ryan Larson within 90 days of this letter. The corrective action plan shall include a time period required to correct the deficiencies in the report that are likely to prevent the system from performing during the next flood event (orange items on the enclosed report card). If the deficiencies are not corrected within the specified timeframe or no corrective action plan is submitted, the RD 0017, 2094, 2096, 2075, 2064 - SJ River East system will no longer be eligible for PL 84-99 rehabilitation assistance.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board, 2) the Corps had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement. We appreciate the collective efforts of the Local Maintaining Agencies to complete repairs of some of the unacceptable items. These maintenance activities have improved the overall condition of the system. We urge your Board and the Local Maintaining Agencies to continue this level of maintenance and place the same emphasis on the remaining unacceptable issues.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report does not imply a performance warranty from the USACE nor from its Architect/Engineer Contractor.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood damage reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended that levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, San Joaquin County Office of Emergency Services, FEMA Region IX, and the Congressional delegation as required by our regulations.

Sincerely,

Andrew B. Kiger, P.E.
Lieutenant Colonel, U.S. Army
District Commander

Enclosures

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Operations and Readiness Branch

MAY 10 2011

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

In accordance with the request from the Central Valley Flood Protection Board, dated December 17, 2010, The U.S. Army Corps of Engineers (USACE) conducted a re-inspection of some unacceptable deficiencies identified during the City of Marysville - Units 1, 2, and 3 Periodic Inspection. On February 9, 2011, Ryan Larson, Jesse Hogan, Mary Perlea, and Erik James of USACE staff, Curt Taras and Allison Tang of the Central Valley Flood Protection Board staff, Clay Thomas of the Department of Water Resources, and Frank Miller of the Marysville Levee Commission attended the reinspection. The system is comprised of three segments. All re-inspection items were along Unit 1, Jack Slough. A revised Report Card and photos of the before and after condition are enclosed and serve as a summary of the findings.

System: City of Marysville - Units 1, 2, and 3 system
Segments: City of Marysville - Unit 1, Jack Slough
City of Marysville - Unit 2, Feather River
City of Marysville - Unit 3, Yuba River

The system rating is based solely on the USACE inspection checklist. The cracking and depressions and rutting issues identified during the periodic inspection have been repaired to an acceptable condition. The repair of the slope stability issue is considered an interim solution and will need to be closely monitored over time. Any movement of the slope in this area should trigger an action to further stabilize the slope. The site must be permanently repaired within two years of the date of this letter. Based on observations made as part of the re-inspection, the City of Marysville - Units 1, 2, and 3 system is rated minimally acceptable because of unwanted vegetation growth, encroachments, and slope stability (shown in purple and yellow on the enclosed Report Card). An engineering determination, based upon visual inspection, concluded that these issues would not prevent the system from performing as intended during the next flood event. The City of Marysville - Units 1, 2, and 3 system is active for PL 84-99 rehabilitation assistance effective December 17, 2010.

The USACE appreciates the actions of the Local Maintaining Agency to quickly make the necessary repairs to the system. These maintenance activities have improved the overall condition of the system. We urge your Board and the Local Maintaining Agency to continue this level of maintenance and build upon these good practices.

When inspecting encroachment items, it was assumed that the encroachments were unpermitted unless documentation was submitted by the sponsor, or was readily available in our files, to show otherwise. If an encroachment is 1) permitted by the Central Valley Flood Protection Board (CVFPB), 2) the Corps had no objection to the issuing of the permit and 3) it was constructed and is maintained in accordance with the permit, that encroachment will receive at least a minimally acceptable rating. Anything over, under, or through the levee and within the project easement, must have a valid CVFPB permit, must be annotated in project as-built drawings, or noted in the project Operations and Maintenance Manual.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a levee safety issue is outside the local sponsor easement, a correction should still be pursued. Neither the system rating nor status in the PL 84-99 rehabilitation program will be adversely impacted by an issue outside of the project easement.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk reduction system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. An acceptable or minimally acceptable Corps inspection rating, alone, does not equate to a certifiable levee for the NFIP.

If you have any questions regarding this inspection or participation in the program, please contact Ryan Larson at (916) 557-7568 or Jesse Hogan at (916) 557-7178. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yuba County Office of Emergency Services, FEMA Region IX, and Congressman Walter Herger's office as required by our regulations.

Sincerely,

Andrew B. Kiger, P.E.
Lieutenant Colonel, U.S. Army
District Commander

Enclosures

MRY1_2010_a_0009-Condition during PI, January 2010

MRY1_2010_a_0009-Condition during the reinspection, February 2011

MRY1_2010_a_0009-Condition during PI, January 2010

MRY1_2010_a_0009-Condition during the reinspection, February 2011

The area noted as slope stability was an area of surface erosion caused by the removal of a dike that had previously directed flows to a controlled location. This drainage feature was removed during road repairs in 2009. The LMA temporarily repaired the issue in February 2010 and subsequently permanently repaired the eroded levee surface in August 2010.

MRY1_2010_a_0036-Condition during PI, January 2010

MRY1_2010_a_0036-Condition during the reinspection, February 2011
All areas of depressions and rutting have been backfilled and compacted as a part of the LMA's regular annual inspection and maintenance program.

There were several areas of cracking along the paved levee patrol road. Several of these cracks have grown over time to several inches wide, but few had encroached into the levee section. The

LMA has repaired these sites by removing the asphalt, placing and compacting fill, and replacing the asphalt. A majority of the patrol road will be replaced as part of the Marysville Ring Levee Project now in construction by the USACE and expected to be completed in 2013.

City of Marysville - Units 1, 2, 3 Minimally Acceptable-Active	Unit 1 Jack Slough	Unit 2 Feather River	Unit 3 Yuba River						
Operations and Maintenance Manuals	M	M	M						
Emergency Supplies and Equipment	A	A	A						
Flood Preparedness and Training	M	M	M						
Unwanted Vegetation Growth	U	U	U						
Sod Cover	A	A	A						
Encroachments	U	U	U						
Closure Structures	A	A	A						
Slope Stability	U	A	M						
Erosion/Bank Caving	M	M	M						
Settlement	A	A	A						
Depressions/Rutting	A	A	A						
Cracking	A	A	A						
Animal Control	M	M	M						
Culverts/Discharge Pipes	NA	NA	NA						
Riprap Revetments & Bank Protection	NA	NA	M						
Revetments other than Riprap	NA	NA	NA						
Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA						
Seepage	A	A	A						

Segment & System Ratings/PL 84-99 Eligibility

- Likely Prevents Performance In Next Flood Event
- Serious deficiency noted in past inspections has not been corrected within the established timeframe
- Likely Prevents Performance In Next Flood Event (Framework)
- Not Likely to Prevent Performance In Next Flood Event
- Not Likely to Prevent Performance In Next Flood Event (Framework)

Legend

A	Acceptable
M	Minimally Acceptable
U	Unacceptable
N/A	Not Applicable

The lowest rating is used to determine the overall segment & system ratings and PL 84-99 Rehabilitation Eligibility

February 9, 2011

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

JUL 24 2015

Operations and Readiness Branch

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The U.S. Army Corps of Engineers (USACE) conducted a Periodic Inspection (PI) for the West Sacramento – SacYolo South Levee System on July 28 – September 5, 2014. The attached PI report itemizes the issues that were noted during the inspection. The attached Addendum and Report Card serve as a summary of the PI. The system is comprised of sixteen segments listed in the Report Card.

Based on observations made as part of the inspection, the West Sacramento – SacYolo South Levee System is rated Unacceptable. The unacceptable rating is due to encroachments, closure structures, slope stability, erosion/bank caving, animal control, depressions/rutting, and cracking (shown in red on the Report Card). An engineering determination, based upon visual inspection, concluded that these issues are likely to prevent the system from performing as intended during the next flood event. These issues should be addressed immediately.

Vegetation growth, sod cover, settlement, and riprap revetments and bank protection observations were determined to be unacceptable; however, an engineering determination concluded that these observations would not prevent the system from performing during the next flood event; therefore, the item ratings are minimally acceptable (shown in yellow on the Report Card). Correction of all yellow observations must be completed within 2 years of the date of this letter or the items will receive unacceptable ratings during the next inspection. USACE encourages public sponsors to follow the maintenance practices in the Levee Owner's Manual as an element of best practices in flood risk management.

Based upon this inspection and the USACE Interim Policy for Determining Eligibility Status of Flood Risk Management Projects for the Rehabilitation Program (RP) pursuant to Public Law (P.L.) 84-99, dated March 21, 2014, the West Sacramento – SacYolo South Levee System is inactive in the PL 84-99 RP. In order to receive an active status in the RP, all items in the section of the report card labeled "Items Affecting PL 84-99 RP Eligibility" must receive an acceptable or minimally acceptable rating. The status will remain inactive until the sponsor presents USACE with sufficient documentation or evidence that all issues used to determine eligibility in the RP have been improved to at least a minimally acceptable condition.

If further information is available that documents correction of an issue; the completion of an interim repair; an issue is not within the sponsor/project easement; or an issue is a less critical concern, please provide documentation for USACE consideration. If a potential levee safety

issue is outside the local sponsor's easement area, USACE recommends the local sponsor develop and implement measures within its legal authorities to mitigate or correct the issue. Neither the system rating nor status in the RP will be adversely impacted by an issue outside the project easement.

The findings associated with this periodic inspection have significant impacts to the protected community (or communities) and will be communicated to interested parties that include federal, state, and local branches of government. This inspection report is used for the purpose of determining eligibility for the RP and should not be construed to provide any express or implied warranty regarding levee performance during a flood event.

This USACE inspection rating represents an evaluation of operations and maintenance of the flood risk management system and may be used in conjunction with other information for a levee certification determination for National Flood Insurance Program (NFIP) purposes, if applicable. It is recommended for levee systems currently accredited by the Federal Emergency Management Agency (FEMA), for NFIP purposes, and receiving a USACE unacceptable rating, be evaluated by the levee owner to determine the potential impacts to the certification for FEMA.

It is requested that an updated levee log, an inspection or plan for inspection of the condition of all pipes affecting the flood risk management structure and a map showing the right-of-way easement area be submitted within one year from the date of this letter, or any re-inspection request.

If you have any questions regarding this inspection or participation in the program, please contact Kim Leonard (916) 557-7183 or Bob Murakami (916) 557-6738. A copy of this letter is being furnished to the Department of Water Resources Flood Operations Center, Yolo County Office of Emergency Services, Solano County Office of Emergency Services, California Office of Emergency Services, FEMA Region IX, Congressman John Garamendi and Congresswoman Doris Matsui.

Sincerely,

Michael J. Farrell
Colonel, U.S. Army
District Commander

Enclosures

	System: West Sacramento - SacYolo South System Rating: Unacceptable Approved SWIF/LOI: No Pl 84-99 RP Eligibility: Inactive	RD 0765 - Glide (GLDE)	RD 0307 - Lisbon (LISB)	RD 0537 - Lovdal - Unit 2, Yolo Bypass (LOV2)	RD 0537 - Lovdal - Unit 1, Sacramento River south of Sac Bypass (LOVS)	Maintenance Area 04 (MA04)	RD 0999 - Netherlands - Unit 1, Yolo Bypass (NTH1)	RD 0999 - Netherlands - Unit 2, Miner Slough (NTH2)	RD 0999 - Netherlands - Unit 3, Sutter Slough (NTH3)	RD 0999 - Netherlands - Unit 4, Sacramento River (NTH4)	RD 0999 - Netherlands - Unit 5, Elk Slough (NTH5)	Sacramento Bypass - Unit 2, south levee (SAC2)	RD 0900 - West Sacramento - Unit 1, Sacramento River north of Deep Water Channel (WS1N)	RD 0900 - West Sacramento - Unit 1, Sacramento River south of Deep Water Channel (WS1S)	RD 0900 - West Sacramento - Unit 2, Yolo Bypass north of Deep Water Channel (WS2N)	RD 0900 - West Sacramento - Unit 2, Yolo Bypass south of Deep Water Channel (WS2S)	Sacramento River DWSC - Navigation Levee (DWSC)	
General	Operations and Maintenance Manuals	A	A	M	M	M	A	A	A	A	A	M	M	M	M	M	A	
	Emergency Supplies and Equipment	M	M	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Flood Preparedness and Training	M	M	M	M	M	A	A	A	A	A	M	M	M	M	M	M	
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	M	M	U	U	U	U	U	U	M	U	U	M	M	M	
	Closure Structures	NA	NA	NA	NA	NA	NA	NA	NA	NA	M	NA	NA	NA	U	NA	NA	
	Slope Stability	U	M	A	M	M	U	U	U	M	M	A	M	M	A	M	M	
	Erosion/Bank Caving	M	M	A	A	M	U	U	U	U	U	M	M	U	M	M	U	
	Animal Control	A	U	M	U	U	U	U	U	M	U	U	U	M	M	M	U	
	Culverts/Discharge Pipes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A	NA	NA	
Levee Embankments - Other Items	Vegetation Growth	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	Sod Cover	A	M	M	M	M	M	A	M	M	M	M	A	M	M	M	M	
	Settlement	M	A	A	A	A	M	M	A	M	M	M	A	M	A	M	M	
	Depressions/Rutting	M	M	A	M	M	M	M	M	M	M	M	M	M	M	M	U	
	Cracking	A	A	M	A	A	U	U	A	A	A	A	A	A	M	M	M	
	Riprap Revetments & Bank Protection	M	M	A	M	M	NA	M	M	M	A	A	M	M	A	NA	A	
	Revetments other than Riprap	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	A	NA	NA	NA	NA	NA	
	Seepage	A	A	M	A	A	M	M	A	A	A	M	A	A	A	A	A	

Legend

A	Acceptable	M	Includes Unacceptable observations not likely to prevent performance in next flood event
M	Minimally Acceptable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe
U	Unacceptable	U	Likely prevents performance in next flood event
N/A	Not Applicable		
RP	Rehabilitation Program (Note: floot fight assistance available regardless of eligibility status)		

The worst rating is used to determine the overall segment system ratings and PL 84-99 Eligibility

Appendix B – Channel Status

August 2017

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

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Appendix B – Channel Status

This appendix provides additional supporting information about channel conditions. These data include estimated channel conveyance capacity for the Sacramento and San Joaquin rivers and their major tributaries. Sections B-2 and B-3 correspond to subsections in Section 5.0 of the 2017 Flood System Status Report (FSSR) main document. Additional inspection and/or evaluation data, recent, ongoing, and planned remedial actions, and ongoing actions to improve future evaluations are described for channel conveyance capacity, channel vegetation, and channel sedimentation.

B.1 Channel Conveyance

This section summarizes estimated channel conveyance capacities along the Sacramento and San Joaquin rivers and their major tributaries. Also included is information about recent, ongoing, and planned remediation actions and ongoing actions to improve future evaluations.

B.1.1 Channel Capacity Status Tabular Results

Tables B-1 and B-2 present a tabulation of estimated channel capacities for the Sacramento and San Joaquin river watersheds, respectively. For each channel reach in the Sacramento River watershed, design capacities from USACE operations and maintenance (O&M) manuals and design capacities from 1957 revised profile drawings are provided where available (USACE, 1957). The 1957 revised profile drawings are the basis for State operations. Any differences between the 1957 revised profile drawings capacity and O&M manual capacity are noted. For each channel reach in the San Joaquin River watershed, design capacities from the O&M manual and design capacities from the U.S. Army Corps of Engineers (USACE) Design Memorandum No. 1 (USACE, 1955) are provided where available. The USACE Design Memorandum No. 1 includes design capacities corresponding to 1955 profile drawings, which serve as the basis for State operations. Differences between USACE Design Memorandum No. 1 capacity and O&M manual capacity are noted.

The reported capacity for each reach or a segment of a reach is the limiting capacity for that section. The flood control system in the basin is characterized by a series of channels, levees, bypasses, gate structures, and weirs that allow floodwater to spill from rivers to natural overflow areas in the Central Valley. The comprehensive system contains many miles of leveed channels, and numerous flood control structures and is the largest flood management system in California.

Models developed under the Central Valley Flood Evaluation Delineation (CVFED) Program were used to evaluate the channel conveyance capacity. The CVFED program developed models to evaluate the SPFC system in the Sacramento and San Joaquin River Basin, capable of simulating the complex interaction of multiple stream systems and waterways. Freeboard requirements were established from the U.S. Army Corps of Engineers (USACE) report entitled "Standard Operations and Maintenance Manual for the Sacramento River Flood Control Project," dated May 1955. Freeboard was established due to uncertainties in hydrology and ever-changing channel conditions. For all riverine streams, 3-foot is the minimum freeboard requirement with exception of flood control bypasses where 6-foot is the minimum freeboard requirement for the Sacramento River system and 4-foot is the minimum freeboard requirement for the San Joaquin River system. The CVFED baseline models for the Sacramento and San Joaquin systems extended into the Delta. The downstream boundary elevations accounted for tidal conditions based on the 1997 flood event. This report did not provide channel capacities in the areas influenced by tidal conditions. Channel capacity conditions were estimated by comparing estimated current capacity with the design channel capacity reported in the USACE O&M manuals, USACE 1957 revised profile drawings, or USACE Design Memorandum No. 1 (1955). The river miles reported in Tables B-1 and B-2 are based on CVFED's hydraulic models.

B.1.2 Summary of Recent Remedial Actions

No recent remedial actions to address channel capacity inadequacies have been conducted other than vegetation management and sediment management activities.

B.1.3 Summary of Ongoing and Planned Remedial Actions

No actions have been planned other than vegetation management and sedimentation management to address channel capacity inadequacies.

B.1.4 Ongoing Actions to Improve Future Evaluations

California Department of Water Resources (DWR) is developing updated and new hydrologic and hydraulic models for major rivers and tributaries in the Central Valley as part of the Central Valley Floodplain Evaluation and Delineation Program. These models will provide a more current data set to identify channel conveyance capacity inadequacies throughout State Plan of Flood Control (SPFC) channels.

DWR is currently in the process of using newly acquired surface elevation data Light Detection and Ranging (LiDAR) and creating project-level hydraulic models for the Sacramento River Flood Control Project that may reveal additional hydraulic capacity issues due to sedimentation. However, DWR is not undertaking this study on the Lower San Joaquin River and Tributaries Project because it is not part of the prescribed channel maintenance per California Water Code Section 8361. Project-level channel capacity evaluations have been completed or are currently underway for the following:

- Bear River (Pleasant Grove Road to Rio Oso)
- Deer Creek
- Elder Creek
- Cherokee Canal
- Cache Creek Settling Basin
- Lindo Channel
- Sutter Bypass
- Sycamore Creek and Sycamore Bypass

Table B-1. Sacramento River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual (cfs)	Design Flow from 1957 Revised Profile Drawings (cfs) (Basis of State Operations)	Difference between 1957 Profile Flow and O&M Capacity (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Estimated Current Capacity	Comments
	From	To							
Feather River									
Thermalito (End of Project Right Levee) to Outfall of OWA	137.7	141.5	210,000	210,000	no	129,600	Potential overtopping	DWR's Analysis	The limiting capacity is at RS 139.165 RB
Outfall of OWA to Honcut Creek	126.5	137.6	210,000	210,000	no	205,000	Potential encroachment	DWR's Analysis	
Honcut Creek to Jack Slough	109.7	126.5	210,000	210,000	no	125,100	Potential encroachment	DWR's Analysis	The limiting capacity is at RS 110.319 RB
Jack Slough to Yuba River	107.7	109.6	210,000	210,000	no	222,900	Sufficient capacity	DWR's Analysis	
Yuba River to Bear River	92.2	107.7	300,000	300,000	no	336,400	Sufficient capacity	DWR's Analysis	
Bear River to Sutter Bypass confluence	87.8	92.2	320,000	320,000	no	245,300	Potential encroachment	DWR's Analysis	
Honcut Creek – Tributary of Feather River									
Feather River to Highway 70	1.129	1.85	5,000	25,000	yes	20,300	Potential encroachment	DWR's Analysis	Backwater Zone (from Feather River)
Upstream of Highway 70 to Railroad	n/a	n/a	5,000	25,000	yes	4,000	Potential overtopping	DWR's Analysis	Backwater Zone (from Feather River)
Railroad to End of Project Levee	n/a	n/a	5,000	25,000	yes	700	Potential overtopping	DWR's Analysis	
Jack Slough – Tributary of Feather River									
Feather River to End of Project Levee	1.27	7.57		Not Specified		Not Specified	Backwater Zone	DWR's Analysis	
Bear River									
Feather River to Yankee Slough	0.56	4.05	40,000	40,000	no	10,800 - 40,070	Backwater Zone	DWR's Analysis	
Western Pacific Interceptor Canal to Dry Creek	4.07	6.11	40,000	37,000	yes	13,500 – 38,900	Backwater Zone	DWR's Analysis	
Dry Creek to End of Project Levees (Camp Far West Rd.)	6.11	13.55	30,000	30,000	no	28,600	Potential encroachment	DWR's Analysis	
Western Pacific Interceptor Canal – Tributary of Bear River									
Bear River to Best Slough	0.057	2.248	10,000	10,000	no	0 – 10,700	Backwater Zone	DWR's Analysis	Reverse flow may occur
End of Project Levees to Best Slough	2.248	5.831	5,000	10,000	yes	0 – 5,000	Backwater Zone	DWR's Analysis	Reverse flow may occur
Best Slough – Tributary of Bear River									
Upstream of Western Pacific Interceptor Canal	0.266	2.269	3,300	3,300	no	0 – 4,900	Backwater Zone	DWR's Analysis	Reverse flow may occur
Dry Creek – Tributary of Bear River									
Bear River to Dry Creek Levee Rd.	0.788	2.288	7,000	9,000	yes	5,100	Potential encroachment	DWR's Analysis	
Dry Creek Levee Rd. to Horstville	2.288	8.92	n/a	9,000	n/a	7,000	Potential encroachment	DWR's Analysis	
Yankee Slough – Tributary of Bear River									
End of Backwater Zone to the Bear River	0.540	3.526	n/a	2,500	n/a	0 – 3,100	Potential encroachment	DWR's Analysis	Restricted capacity due to backwater from Bear River
End of Project Levees to Backwater Zone	3.526	4.404	n/a	2,500	n/a	1,200 – 4,500	Potential encroachment	DWR's Analysis	Capacity depending on stage of Bear River
Upper Sacramento River – above Fremont Weir									
Ord Ferry to Head of East Levee	174.287	183.389	160,000	160,000	no	178,400	Potential encroachment	DWR's Analysis	
Head of East Levee to Moulton Weir	157.609	174.287	160,000	160,000	no	125,700	Potential encroachment	DWR's Analysis	
Moulton Weir to Colusa Weir	144.779	157.609	135,000	135,000	no	74,400	Potential encroachment	DWR's Analysis	
Colusa Weir to River Rd. (Colusa Bridge)	143.496	144.779	48,000	65,000	yes	48,900	Potential encroachment	DWR's Analysis	
River Rd. (Colusa Bridge) to Butte Slough	139.755	143.496	48,000	65,000	yes	46,200	Potential encroachment	DWR's Analysis	
Butte Slough to Meridian Road	134.752	139.755	48,000	66,000	yes	52,900	Potential encroachment	DWR's Analysis	
Meridian Road to Tisdale Weir	119.013	134.752	48,000	66,000	yes	46,900	Potential encroachment	DWR's Analysis	
Tisdale Weir to El Dorado Bend	98.882	119.013	30,000	30,000	no	32,000	Sufficient capacity	DWR's Analysis	

Table B-1. Sacramento River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual (cfs)	Design Flow from 1957 Revised Profile Drawings (cfs) (Basis of State Operations)	Difference between 1957 Profile Flow and O&M Capacity (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Estimated Current Capacity	Comments
	From	To							
El Dorado Bend to Colusa Drain	90.40	98.882	30,000	30,000	no	28,700	Potential encroachment	DWR’s Analysis	Backwater Zone (from Yolo Bypass
Colusa Drain to Yolo Bypass (@Fremont Weir)	84.591	90.40	30,000	30,000	no	19,500	Potential encroachment	DWR’s Analysis	Backwater Zone (from Yolo Bypass)
Lower Sacramento River – below Fremont Weir									
Fremont Weir to Sacramento Weir (Bypass)	63.672	80.133	107,000	107,000	no	87,800	Potential encroachment	DWR’s Analysis	Backwater Zone
Sacramento Weir (Bypass) to American River	60.113	63.672	110,000	107,000	yes	(56,400)	Backwater Zone	DWR’s Analysis	Potential reverse flow (from American River)
American River to Deep Water Ship Channel	57.37	60.113	110,000	110,000	no	101,500	Potential encroachment	DWR’s Analysis	
Deep Water Ship Channel to Elk Slough	42.165	57.37	110,000	110,000	no	91,500	Potential encroachment	DWR’s Analysis	
Elk Slough to Sutter Slough	34.254	42.165	110,000	110,000	no	91,500	Potential encroachment	DWR’s Analysis	
Sutter Slough to Steamboat Slough	32.667	34.254	85,000	85,000	no	94,000	Sufficient capacity	DWR’s Analysis	
Steamboat Slough to Georgiana Slough	26.712	32.667	56,500	56,500	no	63,100	Sufficient capacity	DWR’s Analysis	
Georgiana Slough to Cache Slough (Yolo Bypass Junction)	14.616	26.712	35,900	35,900	no	37,100	Sufficient capacity	DWR’s Analysis	Tidal Influence Zone
Cache Slough to Threemile Slough	10.483	14.616	579,000	579,000	no	987,000	Sufficient capacity	DWR’s Analysis	Tidal Influence Zone
Threemile Slough to Horseshoe Bend	9.139	10.483	514,000	514,000	no	1,028,600	Sufficient capacity	DWR’s Analysis	Tidal Influence Zone
Sherman Lake to Horseshoe Bend	4.000	9.139	514,000	514,000	no	790,200	Sufficient capacity	DWR’s Analysis	Tidal Influence Zone
Sutter Bypass – above Fremont Weir									
Butte Slough to Wadsworth Canal	83.453	93.912	178,000	150,000	yes	68,100	Potential encroachment	DWR’s Analysis	
Wadsworth Canal to Tisdale Bypass	77.252	83.453	178,000	155,000	yes	92,000	Potential encroachment	DWR’s Analysis	Backwater Zone
Tisdale Bypass to Feather River	65.915	77.252	216,500	180,000	yes	37,000	Potential encroachment	DWR’s Analysis	Backwater Zone
Feather River to Verona	56.707	65.915	416,500	380,000	yes	222,800	Potential encroachment	DWR’s Analysis	Backwater Zone
Yolo Bypass – Below Fremont Weir									
Fremont Weir to Knights Landing Ridge Cut	53.957	56.649	343,000	343,000	no	258,000	Potential encroachment	DWR’s Analysis	
Knights Landing Ridge Cut to Cache Creek	50.619	53.957	377,000	377,000	no	275,000	Potential encroachment	DWR’s Analysis	
Cache Creek to Sacramento Bypass	44.399	50.619	377,000	377,000	no	105,500	Potential encroachment	DWR’s Analysis	
Sacramento Bypass to Willow Slough Bypass	43.010	44.399	480,000	480,000	no	400,600	Potential encroachment	DWR’s Analysis	
Willow Slough Bypass to Putah Creek	37.613	43.010	480,000	480,000	no	324,700	Potential encroachment	DWR’s Analysis	
Putah Creek to End of Right Side Project Levee	30.728	37.613	480,000	480,000	no	347,800	Potential encroachment	DWR’s Analysis	
End of Right Side Project Levee to Cache Slough	21.493	30.728	490,000	490,000	no	365,000	Potential encroachment	DWR’s Analysis	
Lindsey Slough to Cache Slough	19.598	21.493	500,000	500,000	no	195,900	Backwater Zone	DWR’s Analysis	Tidal Influence Zone
Lindsey Slough to Sacramento River	0.683	3.761	500,000	500,000	no	437,400	Backwater Zone	DWR’s Analysis	Tidal Influence Zone
Butte Creek									
Highway 99 Crossing to Little Chico Creek Diversion	43.755	Beginning of u/s reach	no	3,000	no	100	Potential Overtopping	DWR’s Analysis	
Highway 99 Crossing to Butte Basin	28.936	43.755	22,000	22,000	no	2,900	Potential overtopping	DWR’s Analysis	
Cherokee Canal									
Harter Road to Cherokee Canal Tributaries (Cottonwood Creek)	15.568	21.018	8,500	8,500	no	1,500	Potential overtopping	DWR’s Analysis	
Cherokee Canal Tributaries to RD 833	6.419	15.680	11,500	12,500	yes	4,200	Potential overtopping	DWR’s Analysis	
RD 833 Canal to Butte Sink	0.299	6.419	12,500	12,500	no	300	Potential overtopping	DWR’s Analysis	Backwater Zone

Table B-1. Sacramento River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual (cfs)	Design Flow from 1957 Revised Profile Drawings (cfs) (Basis of State Operations)	Difference between 1957 Profile Flow and O&M Capacity (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Estimated Current Capacity	Comments
	From	To							
Cottonwood Creek – tributary of Cherokee Canal									
Highway 99 to Cherokee Canal	0.105	1.201	n/a	n/a	n/a	600		DWR's Analysis	
Wadsworth Canal									
End of Canal to Sutter Bypass	0.0666	4.629	1,600	1,600	no	(800)	Potential overtopping	DWR's Analysis	Backwater Zone
Tisdale Bypass									
Sacramento River to Sutter Bypass	0.50	4.70	38,000	38,000	no	8,300	Potential overtopping	DWR's Analysis	Backwater Zone
Colusa Drain									
Colusa Drain to Knights Landing Ridge Cut	0.776	34.227	20,000	20,000	no	400	Potential overtopping	DWR's Analysis	
Knights Landing Ridge Cut to Sacramento River	0.056	0.776	20,000	20,000	no	(1,300)	Potential overtopping	DWR's Analysis	Backwater Zone
Lindo Channel									
Chico Creek to Sycamore Creek	0.036	8.055	6,000	6,000	no	1,900	Potential overtopping	DWR's Analysis	
Big Chico Creek									
Mangrove Ave. Bridge to Sycamore Creek	5.165	8.720	15,000	n/a	n/a	400	Potential overtopping	DWR's Analysis	
Lindo Channel to Mangrove Ave. Bridge	1.672	5.165	15,000	n/a	n/a	1,300	Potential overtopping	DWR's Analysis	
Sacramento River to Lindo Channel Confluence	0.100	1.625	15,000	n/a	n/a	500	Potential overtopping	DWR's Analysis	Backwater Zone
Mud Creek									
End of Project Levees to Sycamore Creek	7.956	9.329	5,500	5,500	no	2,900	Potential encroachment	DWR's Analysis	
Sycamore Creek to UPRR	5.079	7.862	15,000	15,000	no	10,300	Potential encroachment	DWR's Analysis	
UPRR to Big Chico Creek	2.496	5.079	13,000	13,000	no	500	Potential overtopping	DWR's Analysis	
Sycamore Creek									
Big Chico Creek to Sycamore Creek	4.244	6.011	8,500	8,500	no	8,300	Potential encroachment	DWR's Analysis	
Sycamore Bypass to Dry Creek	1.999	4.244	8,500	8,500	no	2,800		DWR's Analysis	No SPFC Levee
Dry Creek to Sheep Hollow Creek	1.597	1.999	10,000	10,000	no	5,600	Potential encroachment	DWR's Analysis	
Sheephollow Creek to Mud Creek	0.099	1.597	11,000	11,000	no	10,700	Potential encroachment	DWR's Analysis	
Sheep Hollow Creek – tributary of Sycamore Creek									
Cohasset Rd. to Sycamore Creek	0.103	0.888	1,400	n/a	n/a	1,300	Potential encroachment	DWR's Analysis	
Dry Creek – tributary of Sycamore Creek									
End of Project Levee to Sycamore Creek	0.049	0.418	500	n/a	n/a	260	Potential encroachment	DWR's Analysis	
American River									
End of SPFC Rt. to End of SPFC Lt. (Mayhew Rd.)	10.851	14.058	115,000	115,000	no	113,800	Potential encroachment	DWR's Analysis	
End of SPFC Lt. (Mayhew Rd.) to Howe Ave.	7.756	10.851	115,000	115,000	no	103,500	Potential encroachment	DWR's Analysis	
Howe Ave. to J St. Bridge	5.849	7.756	115,000	115,000	no	102,400	Potential encroachment	DWR's Analysis	
J St. Bridge to NEMDC	1.871	5.849	115,000	115,000	no	115,500	Sufficient capacity	DWR's Analysis	
NEMDC to Sacramento River	0.191	1.871	180,000	180,000	no	87,900	Potential encroachment	DWR's Analysis	Backwater Zone
NEMDC									
Flow Divide at Pleasant Grove Canal or Sankey Road to Dry Creek	6.442	14.316	1,100	1,500	yes	0 – 1,400	Potential encroachment	DWR's Analysis	Backwater Zone
Dry Creek/Robla Creek to Arcade Creek	5.764	6.442	1,100	1,500	yes	4,700	Potential encroachment	DWR's Analysis	Backwater Zone
Robla Creek to Arcade Creek	3.165	5.764	12,600	16,000	yes	(7,800)	Potential encroachment	DWR's Analysis	Backwater Zone

Table B-1. Sacramento River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual (cfs)	Design Flow from 1957 Revised Profile Drawings (cfs) (Basis of State Operations)	Difference between 1957 Profile Flow and O&M Capacity (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Estimated Current Capacity	Comments
	From	To							
Arcade Creek to American River	2.447	3.165	16,000	16,000	no	(2,900)	Potential encroachment	DWR's Analysis	Backwater Zone
NEMDC Streams									
East Side Canal									
Coon Creek to Markham Ravine	2.967	4.906	5,000	5,000	no	8,400	Sufficient capacity	DWR's Analysis	
Markham Ravine to Auburn Ravine	1.791	2.967	12,000	12,000	no	13,300	Sufficient capacity	DWR's Analysis	
Auburn Ravine to Natomas Cross Canal	0.233	1.791	16,000	16,000	no	400	Potential overtopping	DWR's Analysis	
Pleasant Grove Creek Canal									
Pleasant Grove Creek to Natomas Cross Canal	0.147	2.619	7,000	6,000	yes	(3,500)	Potential overtopping	DWR's Analysis	Backwater Zone
Pleasant Grove Creek to Curry Creek	2.619	3.113	2,700	2,300	yes	(1,400)	Potential overtopping	DWR's Analysis	Backwater Zone
Curry Creek to Flow Divide at Natomas East Main Drainage Canal or Sankey Rd.	3.113	3.834	900	800	yes	(1,400)	Potential overtopping	DWR's Analysis	Backwater Zone
Natomas Cross Canal									
East Side Canal to Sacramento River	0.154	5.163	22,000	22,000	no	(4,900)	Potential overtopping	DWR's Analysis	Backwater Zone
Robla Creek									
End of Project Levees to NEMDC	0.053	1.530	15,000	n/a	n/a	900	Potential encroachment	DWR's Analysis	Backwater Zone
Arcade Creek									
Marysville Blvd. to NEMDC	0.089	2.04	3,300	n/a	n/a	0 – 2,900	Potential overtopping	DWR's Analysis	Backwater Zone
Yolo Bypass Tributaries									
Knights Landing Ridge Cut									
Colusa Drain to Yolo Bypass	1.438	7.13	20,000	20,000	no	(17,000)	Potential overtopping	DWR's Analysis	Backwater Zone
Cache Creek									
RD. 96B to Cache Creek Settling Basin	5.989	13.979	30,000	30,000	no	25,800	Potential encroachment	DWR's Analysis	
Willow Slough Bypass									
End of SPFC Levees to Yolo Bypass	1.617	8.986	6,000	6,000	no	(500)	Potential encroachment	DWR's Analysis	Backwater Zone
Putah Creek									
End of Backwater Influence to End of Project Levees	3.075	9.768	62,000	62.000	no	21,400	Potential encroachment	DWR's Analysis	
Sacramento Bypass									
Sacramento Weir to Yolo Bypass	1.322	2.990	112,000	112,000	no	200	Potential encroachment	DWR's Analysis	Backwater Zone
Sacramento Delta Streams									
Elk Slough									
Sacramento River to Sutter Slough	0.000	9.228	n/a	n/a	n/a	(400)	Potential overtopping	DWR's Analysis	Backwater Zone
Sutter Slough									
Elk Slough to Sacramento River	6.141	6.639	65,000	65,000	no	20,00	Potential encroachment	DWR's Analysis	Backwater Zone
Miner Slough to Elk Slough	2.393	6.141	26,500	26,000	no	19,200	Potential encroachment	DWR's Analysis	Backwater Zone
Steamboat Slough to Miners Slough	0.083	2.393	15,500	15,500	no	16,500	Sufficient capacity	DWR's Analysis	Backwater Zone
Miner Slough									
Sutter Slough to Yolo Bypass	4.669	7.534	10,000	10,000	no	6,400	Potential encroachment	DWR's Analysis	Backwater Zone
Steamboat Slough									
Sutter Slough to Sacramento River	7.176	11.500	28,000	28,000	no	25,400	Potential encroachment	DWR's Analysis	Backwater Zone
Sutter Slough to Cache Slough/Sacramento River	0.345	7.176	43,500	43,500	no	32,700	Potential encroachment	DWR's Analysis	Backwater Zone

Table B-1. Sacramento River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual (cfs)	Design Flow from 1957 Revised Profile Drawings (cfs) (Basis of State Operations)	Difference between 1957 Profile Flow and O&M Capacity (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Estimated Current Capacity	Comments
	From	To							
Georgiana Slough									
Sacramento River to Delta Area	0.037	12.187	20,600	20,600	no	(1,100)	Potential overtopping	DWR's Analysis	Backwater Zone
Yolo Delta Streams									
Haas Slough									
Project Levees to Cache Slough	0.193	2.658	n/a	n/a	n/a	4,700	Backwater Zone	DWR's Analysis	Backwater Zone
Cache Slough									
Upstream of Hass Slough	24.414	25.739	n/a	n/a	n/a	(15,100)	Backwater Zone	DWR's Analysis	Backwater Zone
Yolo Bypass to Haas Slough	22.003	24.414	n/a	n/a	n/a	(24,000)	Backwater Zone	DWR's Analysis	Backwater Zone
Lindsey Slough									
Yolo Bypass to Project Levees	0.968	5.254	43,500	43,500	no	(8,000)	Backwater Zone	DWR's Analysis	Backwater Zone

Table B-2. San Joaquin River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual^2 (cfs)	Design Flows from Corps Design Memo No. 1	Difference between O&M capacities and Design Memo No. 1 (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Current Capacity Estimate	Comments
	From	To							
Ash Slough									
East Side Bypass to End of Project Levees	0.158	4.893	5,000	n/a	n/a	2,500	Potential encroachment	DWR's Analysis	
Berenda Slough									
East Side Bypass to End of Backwater Zone (Hemlock Rd.)	0.106	1.559	2,000	n/a	n/a	1,900	Potential encroachment	DWR's Analysis	
End of Backwater Zone (Hemlock Rd.) to End of Project Levees	1.559	4.284	2,000	n/a	n/a	1,400	Potential encroachment	DWR's Analysis	
Fresno River									
East Side Bypass to End of Project Levees	0.590	9.831	5,000	n/a	n/a	3,700	Potential encroachment	DWR's Analysis	
Bear Creek									
Deep Slough to East Side Canal/End of Project Levees	4.472	8.159	7,000	n/a	n/a	5,900	Potential encroachment	DWR's Analysis	
Owens Creek									
East Side Bypass to End of Project Levees	0.077	0.965	2,000	n/a	n/a	4,800	Sufficient capacity	DWR's Analysis	
Mariposa Bypass									
San Joaquin River to East Side Bypass	0.668	4.177	8,500	n/a	n/a	9,100	Sufficient capacity	DWR's Analysis	
Chowchilla Bypass									
Firebaugh Rd. to San Joaquin River	36.488	43.133	5,500	n/a	n/a	6,800	Sufficient capacity	DWR's Analysis	
East Side Bypass to Firebaugh Rd.	0.5990	36.488	5,500	n/a	n/a	6,400	Sufficient capacity	DWR's Analysis	
Eastside Bypass									
Berenda Slough to Fresno River	24.484	26.774	10,000	n/a	n/a	15,200			
Ash Slough to Berenda Slough	21.542	24.484	12,000	n/a	n/a	19,900	Sufficient capacity	DWR's Analysis	
End of Backwater Zone (Flanagan Rd.) to Ash Slough	15.454	21.542	17,500	n/a	n/a	30,800	Sufficient capacity	DWR's Analysis	
San Slough to End of Backwater Zone (Flanagan Rd.)	11.138	15.454	17,500	n/a	n/a	10,000	Potential encroachment	DWR's Analysis	
Mariposa Bypass to Sand Slough	2.015	11.138	16,500	n/a	n/a	21,700	Sufficient capacity	DWR's Analysis	
Deep Slough and Owens Creek	0.177	2.015	8,000	n/a	n/a	9,500	Sufficient capacity	DWR's Analysis	
Deep Slough/Eastside Bypass									
Bear Creek to East Side Bypass	0.295	5.175	9,000	n/a	n/a	11,000	Sufficient capacity	DWR's Analysis	
Bear Creek/Eastside Bypass									
San Joaquin River to Deep Slough	0.407	4.096	14,400	n/a	n/a	12,300	Potential encroachment	DWR's Analysis	
French Camp Slough									
San Joaquin River to Duck Creek	0.066	1.820	2,000	n/a	n/a	8,500	Sufficient capacity	DWR's Analysis	Backwater Zone
Duck Creek to North Little Johns Creek	1.986	2.750	n/a	n/a	n/a	5,300	n/a	DWR's Analysis	
North Little Johns Creek to Duck Creek	4.246	6.171	1,750	n/a	n/a	1,200	Potential encroachment	DWR's Analysis	
North Branch South Little Johns Creek									
Stream Split to End of Project Levees at Hwy. 99	0,000	1.031	800	n/a	n/a	700	Potential encroachment	DWR's Analysis	
South Branch South Little Johns Creek									
Stream Split to End of Project Levees at Hwy. 99	0.000	1.058	700	n/a	n/a	600	Potential encroachment	DWR's Analysis	
Upper San Joaquin River									
Chowchilla Bypass to End of Project Levees	179.41	189.50	8,000	n/a	n/a	10,000	Sufficient capacity	DWR's Analysis	
Sand Slough to Fresno Slough	130.50	133.27	4,500	n/a	n/a	2,600	Potential encroachment	DWR's Analysis	
Mariposa Bypass to End of Project Levees	109.78	130.50	1,500	n/a	n/a	2,000	Potential encroachment	DWR's Analysis	
Bear Creek to Mariposa Bypass	98.00	109.78	10,000	n/a	n/a	8,400	Potential encroachment	DWR's Analysis	

Table B-2. San Joaquin River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual[2] (cfs)	Design Flows from Corps Design Memo No. 1	Difference between O&M capacities and Design Memo No. 1 (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Current Capacity Estimate	Comments
	From	To							
Lower San Joaquin River									
Merced River to Bear Creek	80.99	98.00	22,000	22,000	no	19,800	Potential encroachment	DWR's Analysis	
End of Backwater zone (near Olive Ave.) to Merced River	57.98	73.23	45,000	45,000	no	56,600	Sufficient capacity	DWR's Analysis	
Start of Project Levees to End of Backwater zone (near Olive Ave.)	54.34	57.98	45,000	45,000	no	82,400	Sufficient capacity	DWR's Analysis	Backwater Zone
Tuolumne River to Gap in Project Levees at Grayson, CA	43.87	49.05	45,000	45,000	no	11,700	Potential encroachment	DWR's Analysis	Backwater Zone
Stanislaus River to Tuolumne River	35.49	42.10	46,000	46,000	no	37,300	Potential encroachment	DWR's Analysis	
Paradise Cut to Stanislaus River	21.48	35.49	52,000	52,000	no	59,200	Sufficient capacity	DWR's Analysis	
Walthall Slough to Paradise Cut	19.43	21.48	37,000	37,000	no	48,000	Sufficient capacity	DWR's Analysis	
Old River to Walthall Slough	15.90	19.43	37,000	37,000	no	60,200	Sufficient capacity	DWR's Analysis	
French Camp Slough to Old River	5.71	15.90	18,000	n/a	n/a	23,000	Sufficient capacity	DWR's Analysis	
Burns Cutoff to French Camp Slough	3.23	5.71	18,000	n/a	n/a	47,000	Sufficient capacity	DWR's Analysis	
Paradise Cut									
Old River to San Joaquin River	0.00	4.86	15,000	n/a	n/a	16,000	Sufficient capacity	DWR's Analysis	
Old River									
Middle River to San Joaquin River	14.67	18.70	19,000	n/a	n/a	29,900	Sufficient capacity	DWR's Analysis	
Paradise Cut to Middle River	13.20	14.67	15,000	n/a	n/a	24,900	Sufficient capacity	DWR's Analysis	
Salmon Slough/Grant Line Canal to Paradise Cut	11.64	13.20	30,000	n/a	n/a	49,800	Sufficient capacity	DWR's Analysis	
Start of Project Levees to Salmon Slough/Grant Line Canal	11.10	11.64	n/a	n/a	n/a	19,000	n/a	DWR's Analysis	
Salmon Slough/Grant Line Canal									
Grant Line Canal to Old River	6.90	7.91	30,000	n/a	n/a	43,600	Sufficient capacity	DWR's Analysis	
Stanislaus River									
San Joaquin River to End of Project Levees	0.10	12.48	12,000	n/a	n/a	7,600	Potential encroachment	DWR's Analysis	
Tuolumne River									
San Joaquin River to End of Project Levees	0.00	1.48	15,000	n/a	n/a	2,900	Potential encroachment	DWR's Analysis	Backwater Zone
San Joaquin Area Flood Control Agency									
Bear Creek									
Mosher Slough to Pixley Slough	0.851	2.433	7,630	n/a	n/a	6,100	Potential encroachment	DWR's Analysis	Area under the influence of backwater, low confidence estimate, needs further review
Pixley Slough to Mosher Diversion	2.462	10.449	7,630	n/a	n/a	1,400	Potential Overtopping	DWR's Analysis	Limiting capacity at RM 7.458.
Mosher Diversion to Paddy Creek	10.507	12.872	5,000	n/a	n/a	1,200	Potential Overtopping	DWR's Analysis	Limiting capacity at RM 10.507
Upstream from Paddy Creek	12.954	16.325	1,800	n/a	n/a	1,100	Potential encroachment	DWR's Analysis	Limiting capacity at RM 16.242
Pixley Slough									
Upstream from Bear Creek	0.033	2.519	n/a	n/a	n/a	400	n/a	DWR's Analysis	Area under the influence of backwater, low confidence estimate, needs further review
Mosher Creek & Diversions									
Upstream from Bear Creek	0.055	1.779	n/a	n/a	n/a	300	n/a	DWR's Analysis	Area under the influence of backwater, low confidence estimate, needs further review
Paddy Creek									
Bear Creek to South Paddy Creek	0.092	0.407	2,000	n/a	n/a	2,900	Sufficient capacity	DWR's Analysis	Limiting capacity at RM 0.407
South Paddy Creek to Middle Paddy Creek	0.045	1.336	1,800	n/a	n/a	1,800	Sufficient capacity	DWR's Analysis	Limiting capacity at RM 0.536
Upstream from Middle Paddy Creek	1.377	3.562	1,200	n/a	n/a	700	Potential encroachment	DWR's Analysis	Limiting capacity at RM 3.385

Table B-2. San Joaquin River Watershed Channel Capacity Status

River Reach	River Miles		Design Capacity from O&M Manual^2 (cfs)	Design Flows from Corps Design Memo No. 1	Difference between O&M capacities and Design Memo No. 1 (yes/no)	Estimated Current Channel Conveyance Capacity (cfs)	Channel Capacity Status	Data Source for Current Capacity Estimate	Comments
	From	To							
South Paddy Creek - Upstream from Paddy Creek	0.484	1.421	400	n/a	n/a	360	Potential encroachment	DWR's Analysis	Limiting capacity at RM 0.484
Middle Paddy Creek - Upstream from Paddy Creek	0.043	1.41	750	n/a	n/a	400	Potential encroachment	DWR's Analysis	Limiting capacity at RM 1.254
San Joaquin Area Flood Control Agency									
Calaveras River									
Upstream from San Joaquin River to Stockton Diverting Canal	0.219	5.686	15,818	n/a	n/a	19,400	Sufficient capacity	DWR's Analysis	Limiting capacity at RM 4.063
Stockton Diverting Canal									
Calveras River to Mormon Slough	0.108	4.808	15,022	n/a	n/a	16,700	Sufficient capacity	DWR's Analysis	Limiting capacity at RM 1.346
Mormon Slough									
Stockton Diverting Canal to Potter Creek	4.969	7.058	15,022	n/a	n/a	13,600	Potential encroachment	DWR's Analysis	Limiting capacity at RM 6.918
Upstream from Potter Creek	7.09	7.1229	15,022	n/a	n/a	15,600	Sufficient capacity	DWR's Analysis	Limiting capacity at RM 7.122

Future project-level channel capacity evaluations are planned for the following:

- Feather River
- Little Chico Creek
- Chico Creek
- Butte Slough
- Willow Slough Bypass
- Putah Creek
- American River
- Bear River
- Cherokee Canal
- Colusa Back Borrow Pit
- Mud Creek
- Putah Creek
- Sacramento River
- Tisdale Bypass
- Wadsworth Canal
- Yolo Bypass
- Yuba River
- Natomas Cross Canal
- Linda and Arcade Creek
- Middle Creek

Future project-level channel capacity evaluations are planned for the following:

- American River
- Yolo Bypass
- Yuba River

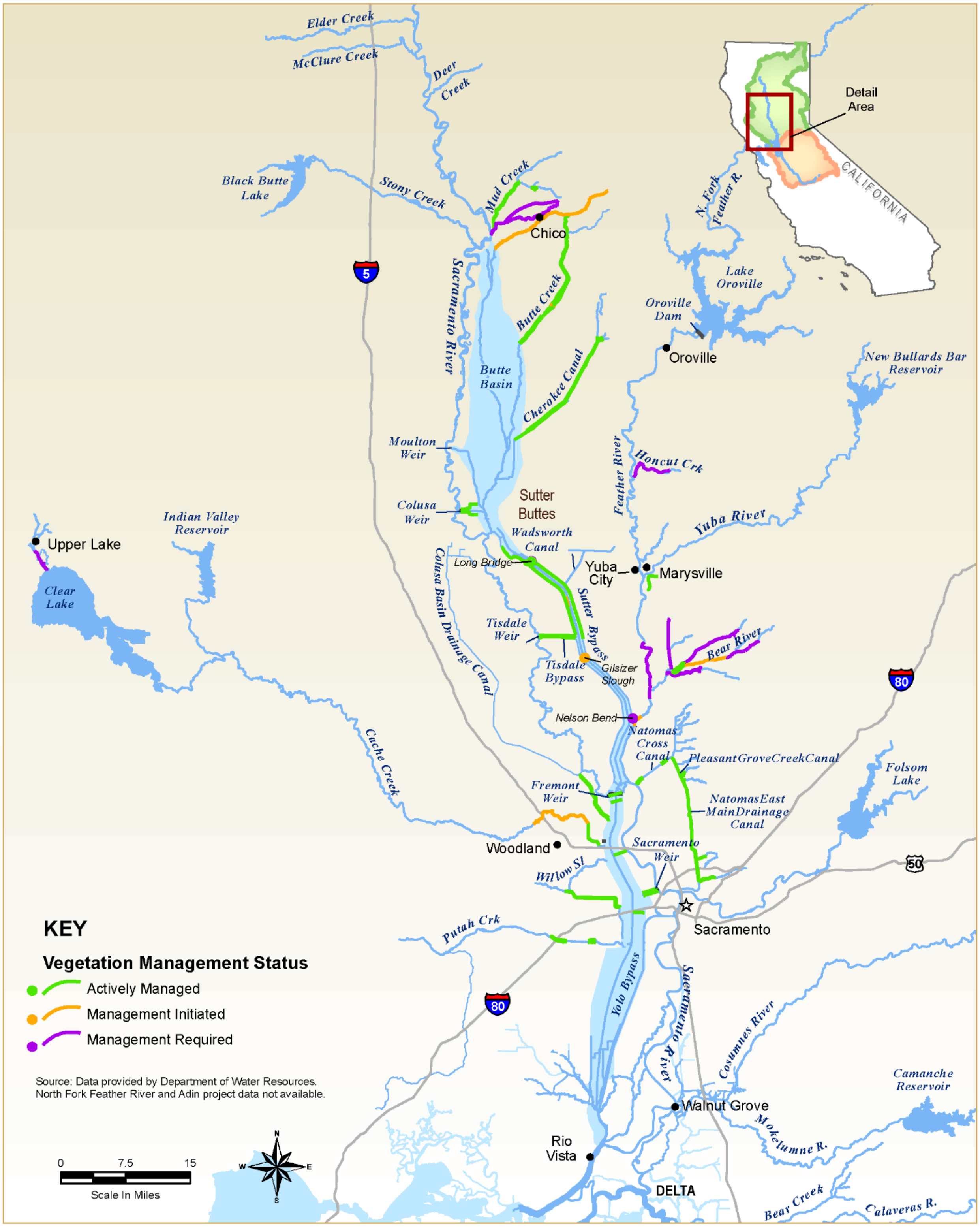
B.2 Channel Vegetation

This section describes recent, ongoing, and planned remedial actions to improve future evaluations. A map of ongoing and planned DWR vegetation management activities is also included.

B.2.1 Summary of Recent Remedial Actions

Routine maintenance work within the channels includes mowing, disking, and burning vegetation, removing dead and downed trees and/or debris that could obstruct flows during high water events within the channel, and limbing up and/or removing trees. DWR performs these tasks annually to retain an acceptable level of readiness for high water events.

Areas undergoing active vegetation management, or in which vegetation management has been initiated in the Sacramento River watershed, are shown in Figure B-1.



Source: Data provided by Department of Water Resources.
North Fork Feather River and Adin project data not available.

Figure B-1. Channel Vegetation Management Status in the Sacramento River Watershed

The figure does not represent all channels that DWR is responsible for maintaining. Data were unavailable for the San Joaquin River watershed.

B.2.2 Summary of Ongoing and Planned Remedial Actions

Ongoing and planned remedial actions related to channel vegetation management are shown in Figure B-1. Nonroutine vegetation management activities are specified in vegetation management plans. Channels for which DWR is currently preparing or will be preparing future vegetation management plans are listed below:

- Feather River (Lower Feather Corridor Management Plan already developed))
- Deer Creek
- Chico Area Streams (Including Lindo Channel, Big Chico Creek, Little Chico Creek, and Mud Creek)
- Natomas East Main Drain Canal
- Elder Creek(i.e., the first stage of the planned sediment removal program)
- Sutter Bypass

Following the completion of project-level channel capacity evaluations listed in Section B-1, vegetation management plans will follow DWR guidance.

B.2.3 Ongoing Actions to Improve Future Evaluations

DWR will continue to compile information about past, current, and future vegetation management actions in the Sacramento River watershed in areas where DWR is responsible for maintenance.

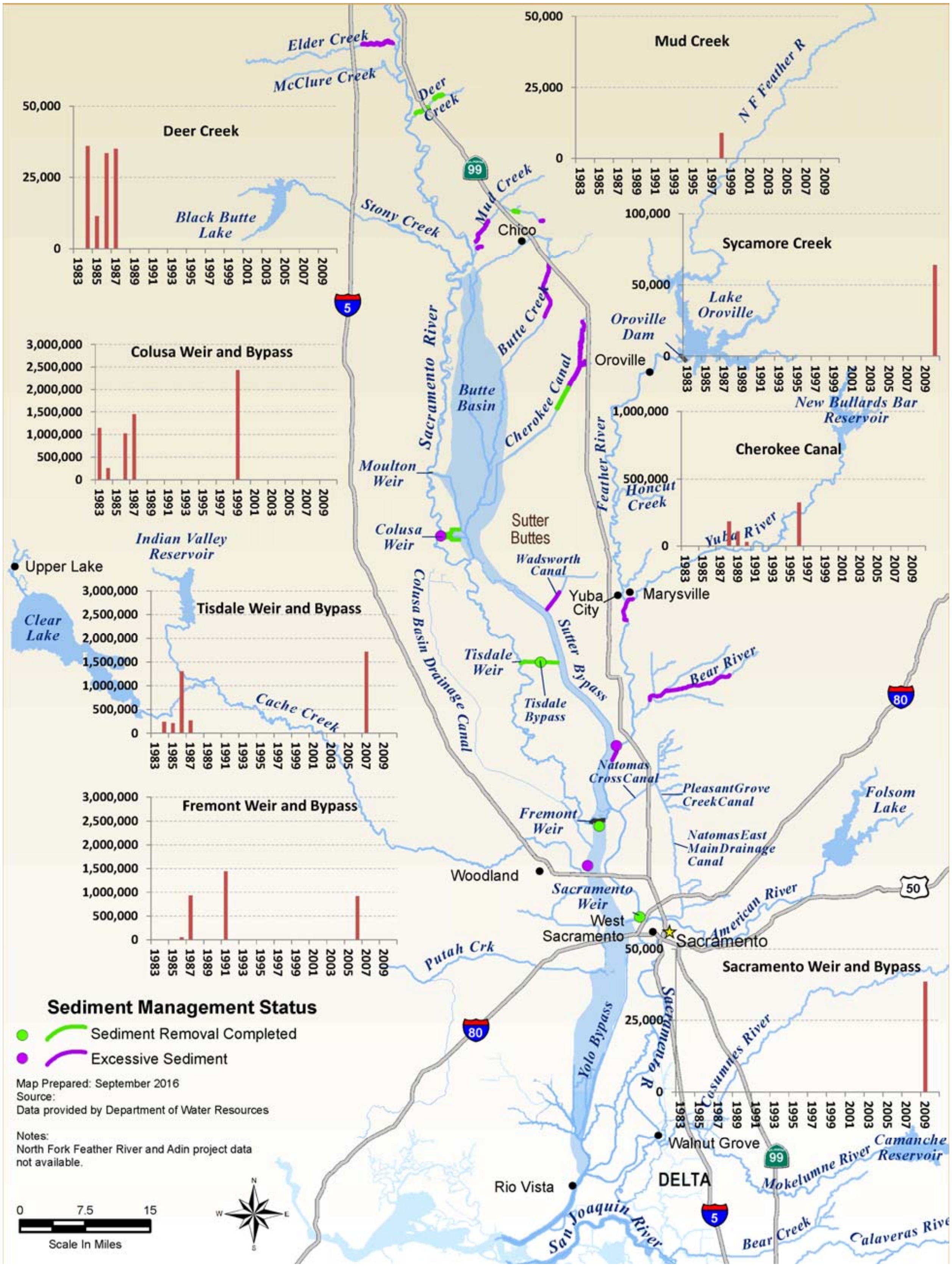
B.3 Channel Sedimentation

This section describes recent, ongoing, and planned remedial actions to improve future evaluations.

B.3.1 Summary of Recent Remedial Actions

DWR performs sediment management for channels it maintains in the Sacramento River Flood Control Project per California Water Code Section 8361. Sediment, debris, and rubbish have been removed in the past to retain the required conveyance capacity. Once excess sediment has accumulated in a channel such that the channel does not pass the design flow with adequate freeboard, sediment removal projects are developed.

Large-scale sediment removal projects have been implemented recently in the Sacramento River watershed. Figure B-2 shows the current status of sediment management projects in channels that DWR is responsible for maintaining in the Sacramento River watershed. Graphs embedded on Figure B-2 show annual cubic yards of sediment removed by DWR from 1983 through 2016. Data for sediment management activities in the San Joaquin River watershed are currently not available.



Map Prepared: September 2016
Source:
Data provided by Department of Water Resources

Notes:
North Fork Feather River and Adin project data not available.

Figure B-2. Channel Sediment Management Status in the Sacramento River Watershed

B.3.2 Summary of Ongoing and Planned Remedial Actions

DWR identifies areas of accumulated sediment based on annual visual observations of the channels. In addition, high water staking may reveal reaches of a channel that do not convey the design capacity, as evidenced by the water surface encroaching on the freeboard. Once visual observations and high water staking reveal a potential sediment problem, hydraulic models are prepared to evaluate the extent of the problem.

By December 2016, DWR plans to identify all additional SPFC channels within the Sacramento River watershed that are in need of sediment removal and develop channel sediment management plans to safely convey the channel’s design flows without encroaching on design levels of freeboard.

From July 2010 to present, DWR has initiated or completed project level hydraulic evaluations as shown in Section B-1 to determine the water surface elevation impact of observed sediment in the channels. Based on these modeling results, sediment removal projects to restore channel conveyance capacity for Sycamore Creek was completed in 2010. In addition, a sediment removal project for Elder Creek has been initiated. Other sediment management studies that are currently in various stages of development by DWR within SPFC channels include Upper Bear River and Cache Creek Settling Basin.

Figures B-3 through B-33 show summary analyses of the channel capacity reach maps.

B.3.3 Ongoing Actions to Improve Future Evaluations

DWR’s goal is to implement these sediment management projects as part of a bigger-picture channel management strategy that incorporates possible changes or effects to the system upstream and downstream from the sedimentation problem areas. The majority of ongoing actions are centered around routine operations and maintenance tasks.

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Figure B-3. Sacramento River Watershed Index

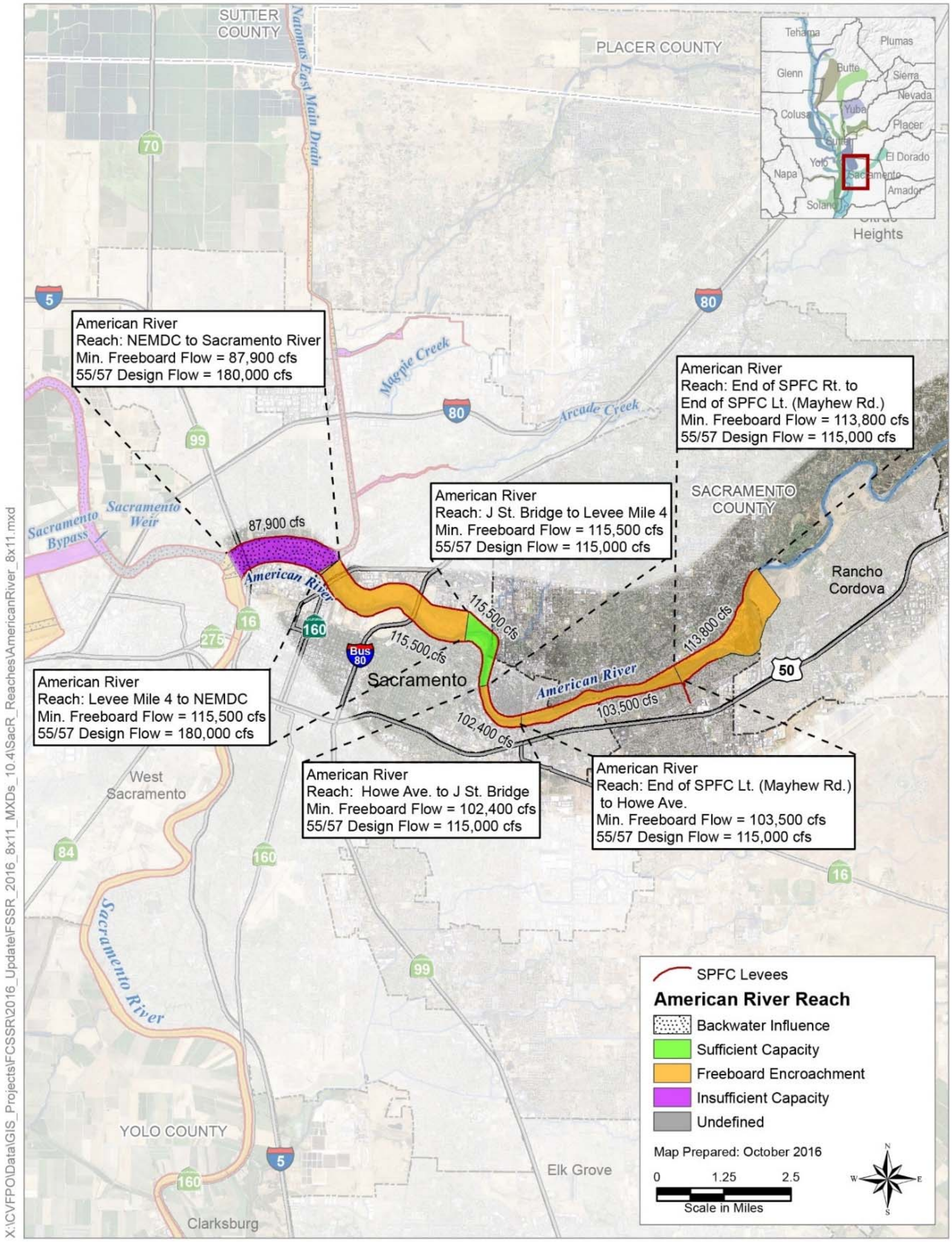

Figure B-4. American River Capacity Reach Map

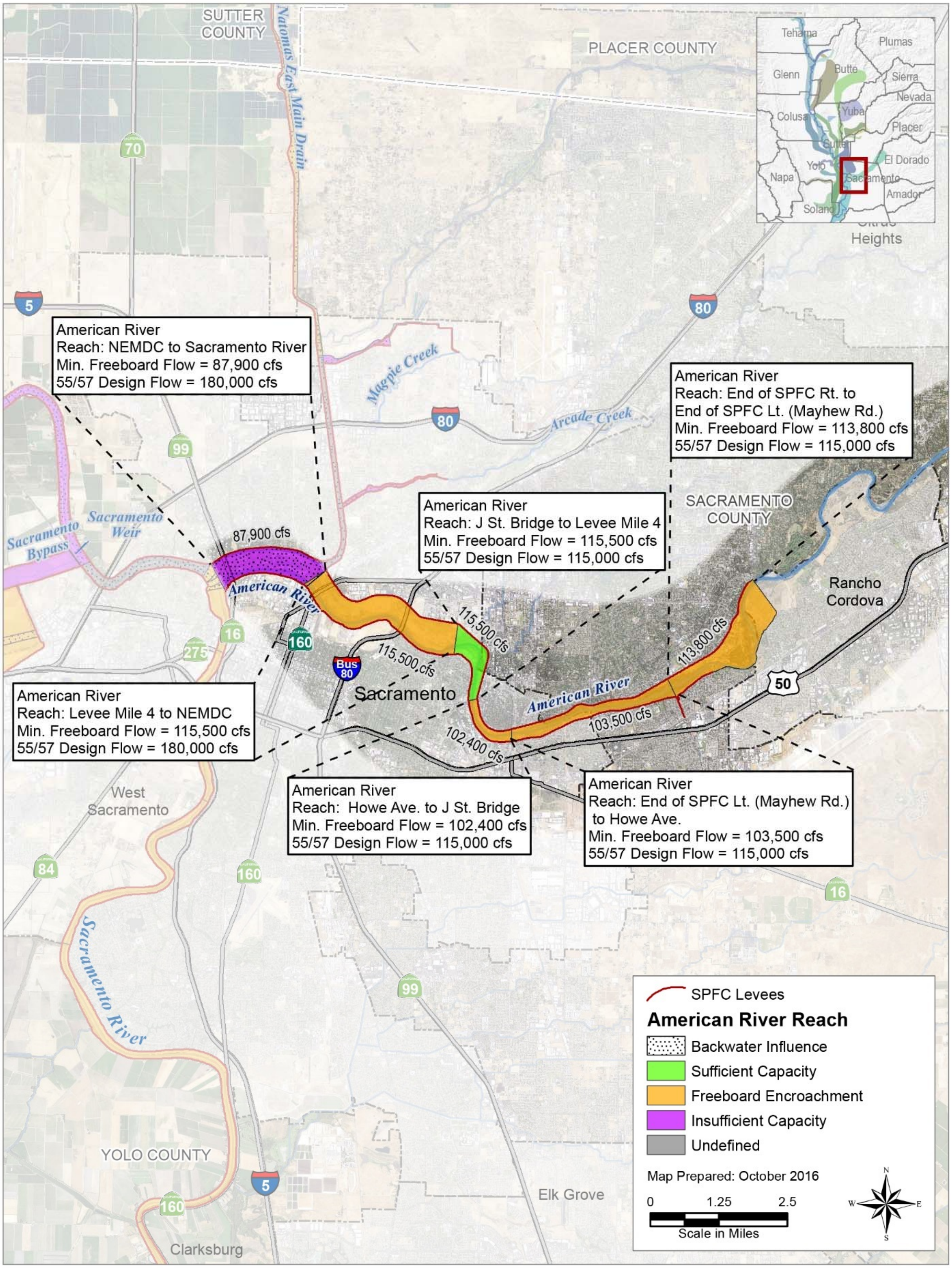

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Figure B-5. American River Capacity Reach Map

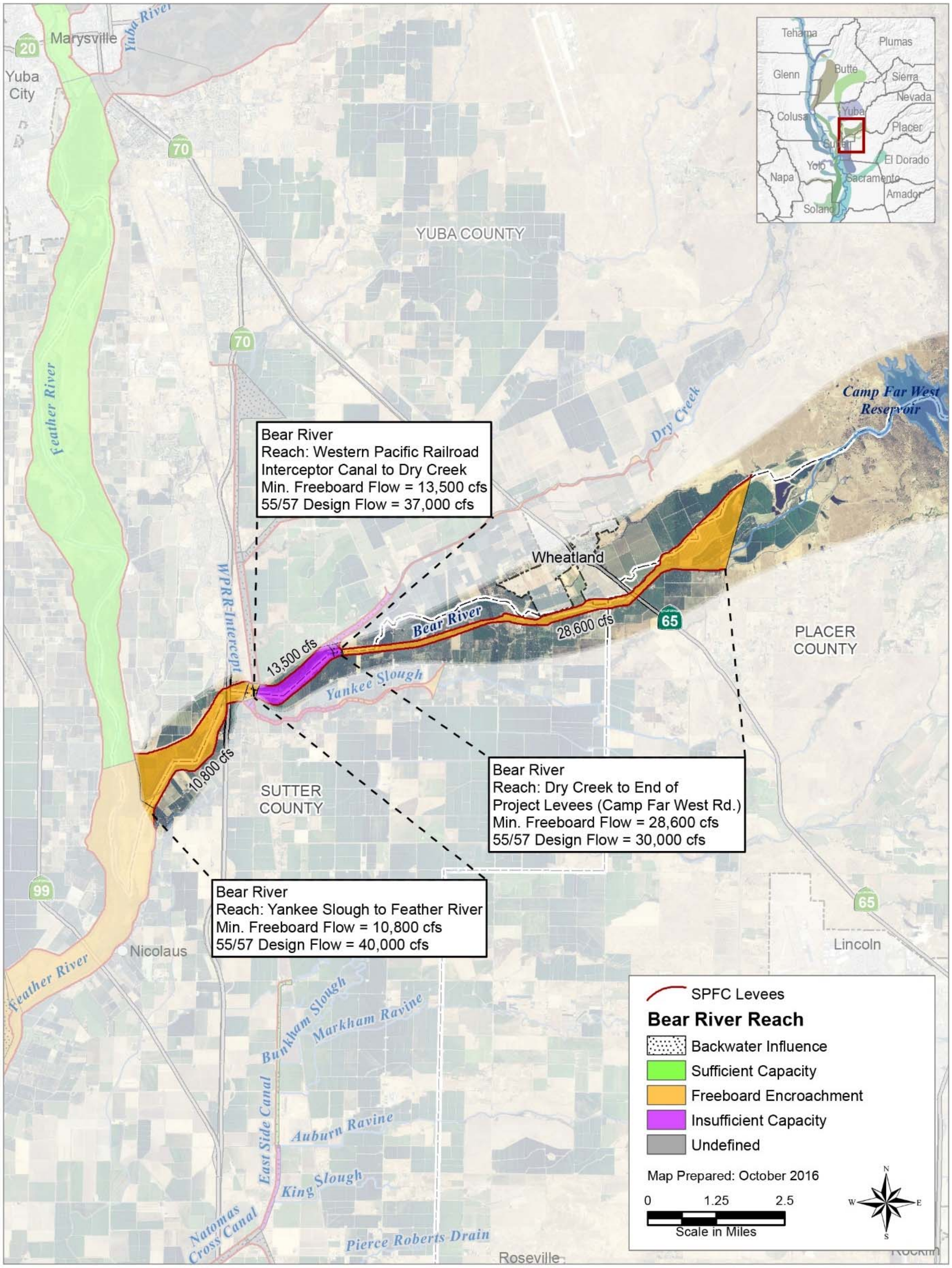

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Figure B-6. Bear River Capacity Reach Map

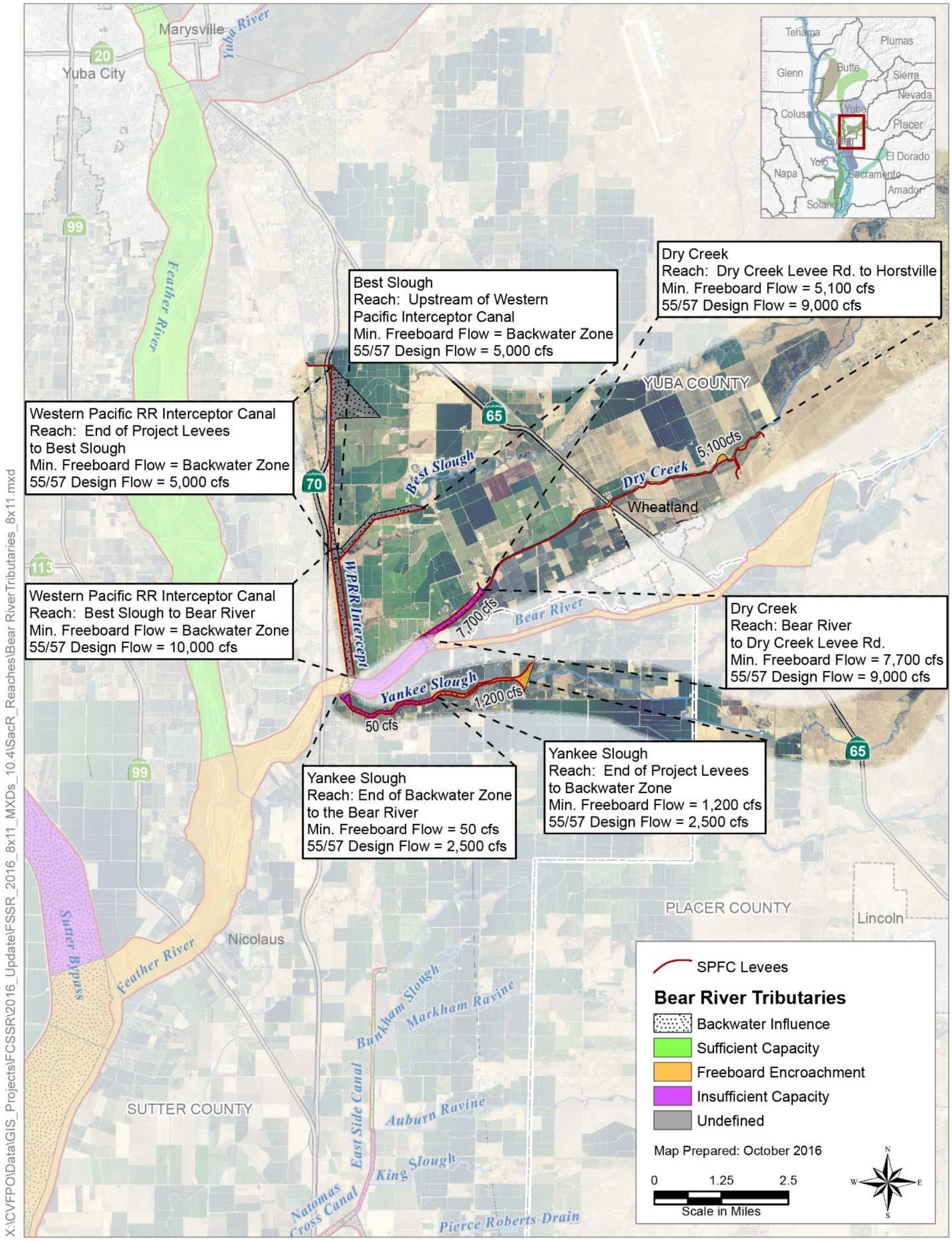


Figure B-7. Bear River Tributaries Capacity Reach Map

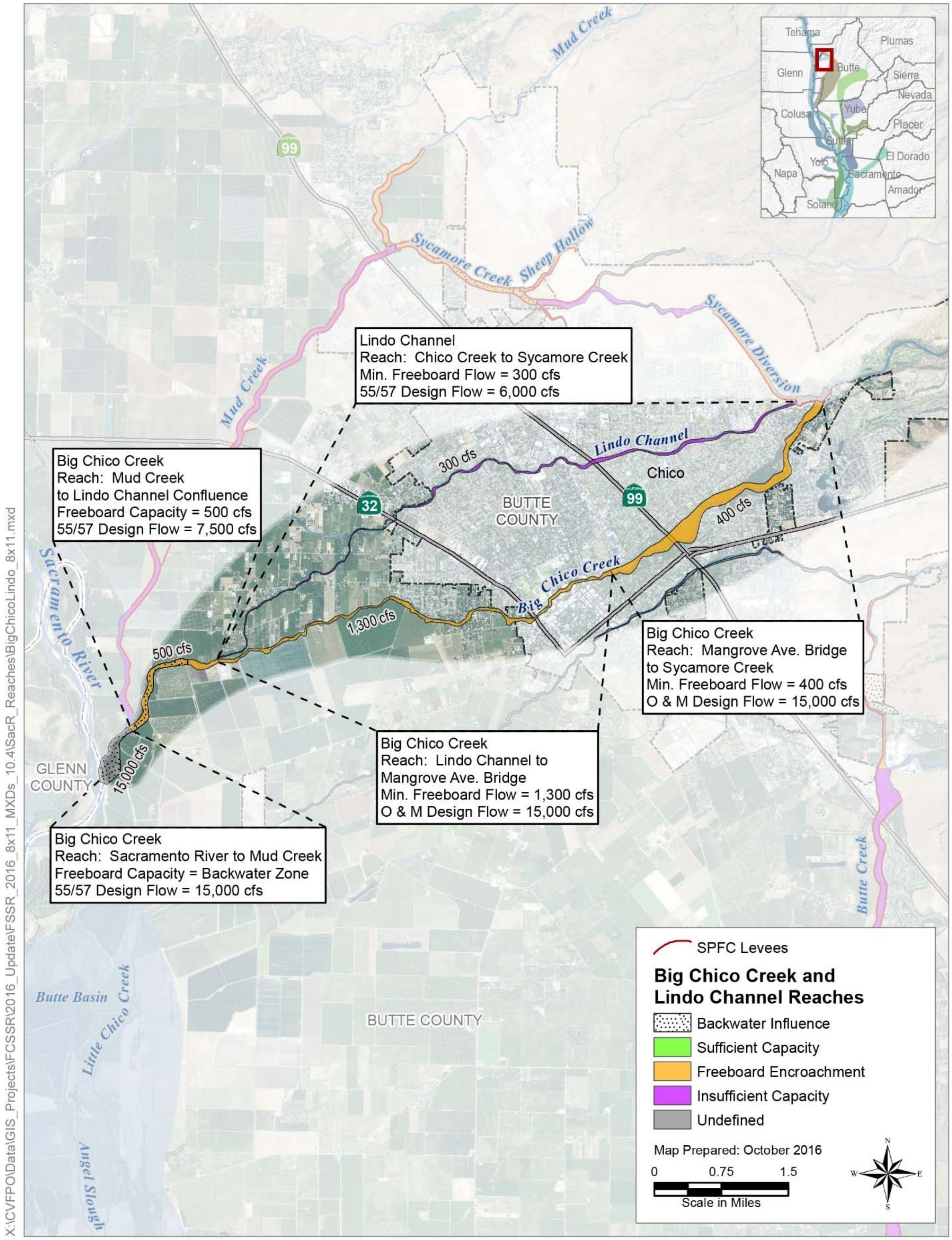


Figure B-8. Big Chico Creek and Lindo Channel Capacity Reach Map

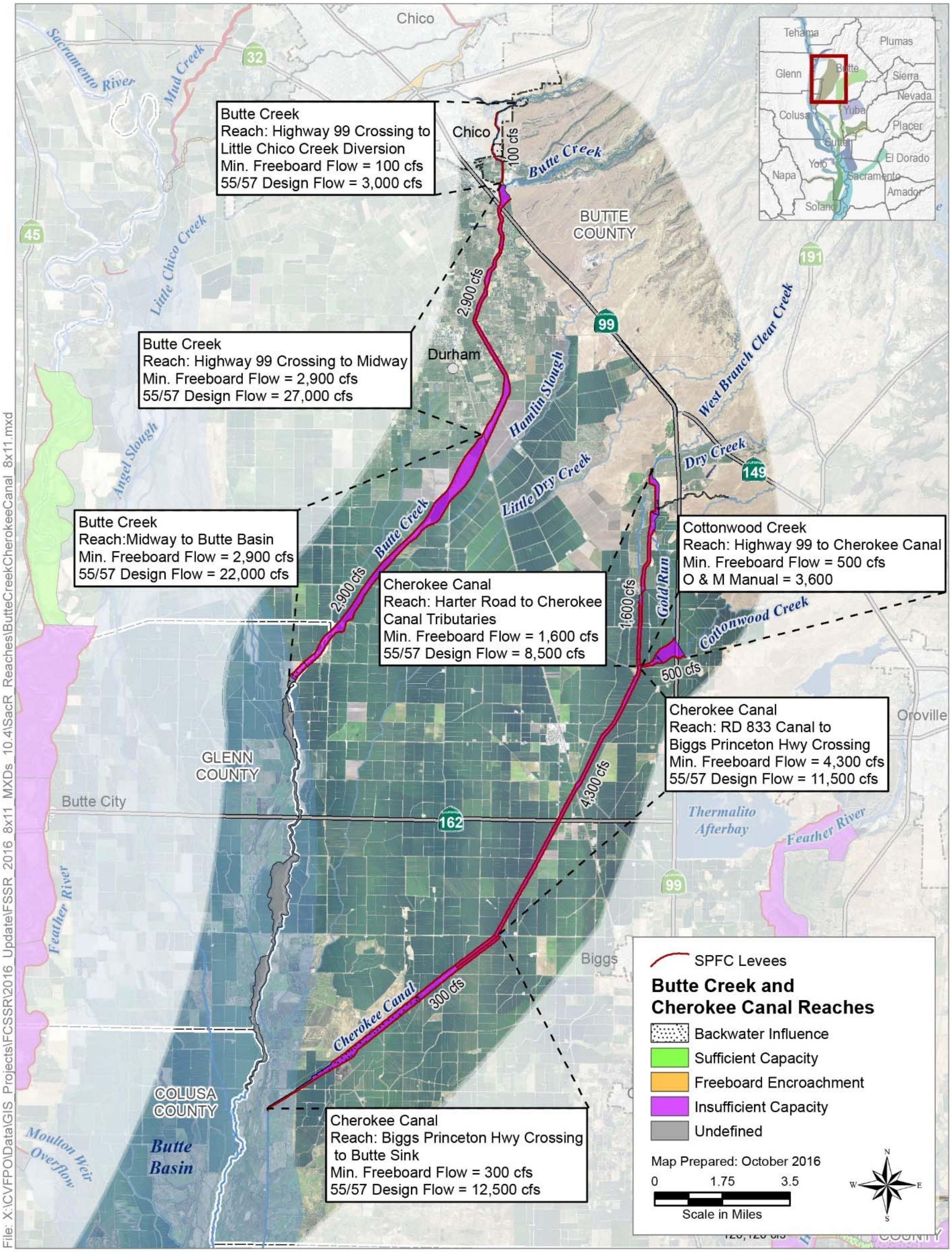
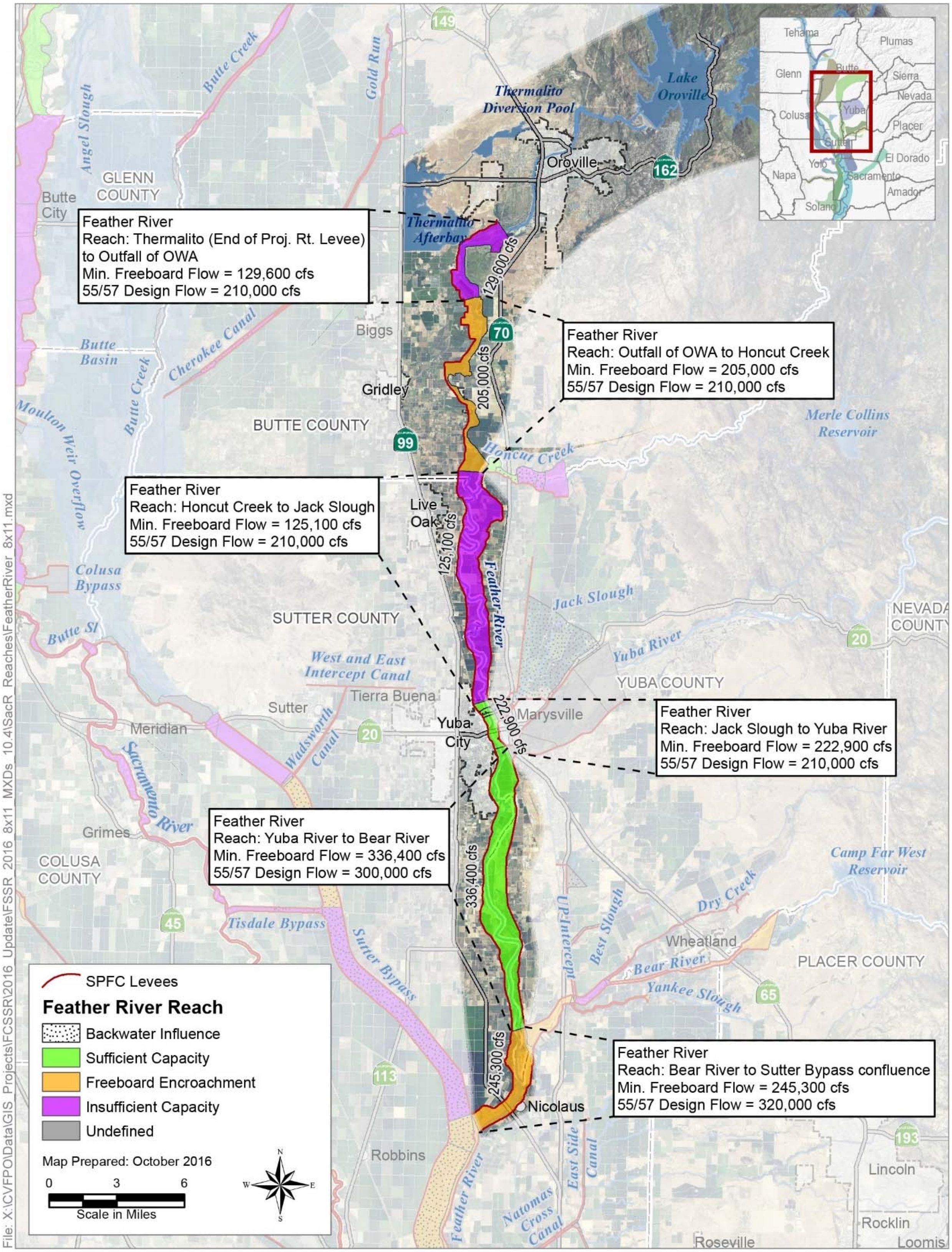


Figure B-9. Butte Creek and Cherokee Canal Capacity Reach Map



Feather River
Reach: Thermalito (End of Proj. Rt. Levee) to Outfall of OWA
Min. Freeboard Flow = 129,600 cfs
55/57 Design Flow = 210,000 cfs

Feather River
Reach: Outfall of OWA to Honcut Creek
Min. Freeboard Flow = 205,000 cfs
55/57 Design Flow = 210,000 cfs

Feather River
Reach: Honcut Creek to Jack Slough
Min. Freeboard Flow = 125,100 cfs
55/57 Design Flow = 210,000 cfs

Feather River
Reach: Jack Slough to Yuba River
Min. Freeboard Flow = 222,900 cfs
55/57 Design Flow = 210,000 cfs

Feather River
Reach: Yuba River to Bear River
Min. Freeboard Flow = 336,400 cfs
55/57 Design Flow = 300,000 cfs

Feather River
Reach: Bear River to Sutter Bypass confluence
Min. Freeboard Flow = 245,300 cfs
55/57 Design Flow = 320,000 cfs

Map Prepared: October 2016

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Figure B-10. Feather River Capacity Reach Map

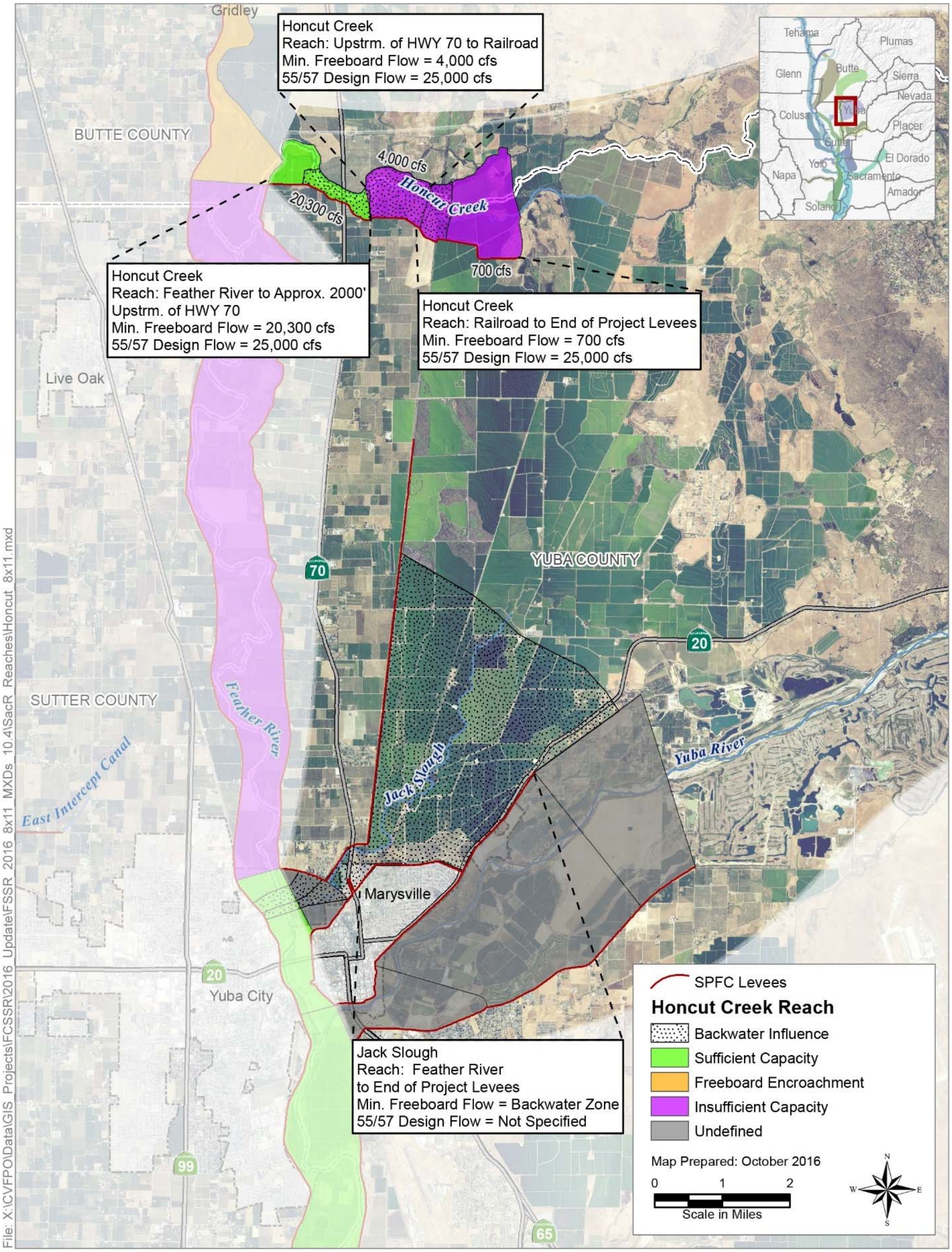


Figure B-11. Honcut Creek Capacity Reach Map

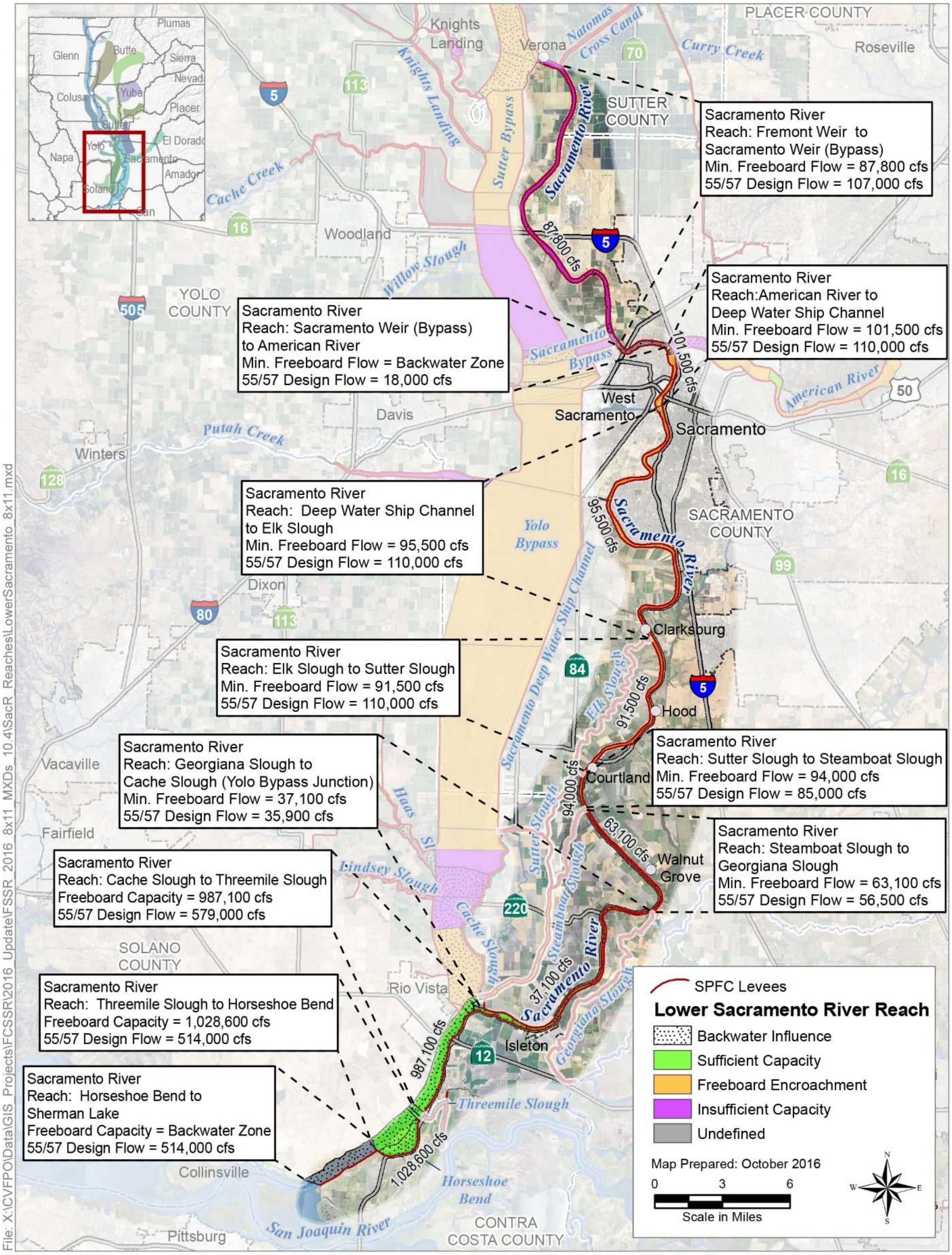


Figure B-12. Lower Sacramento River Capacity Reach Map

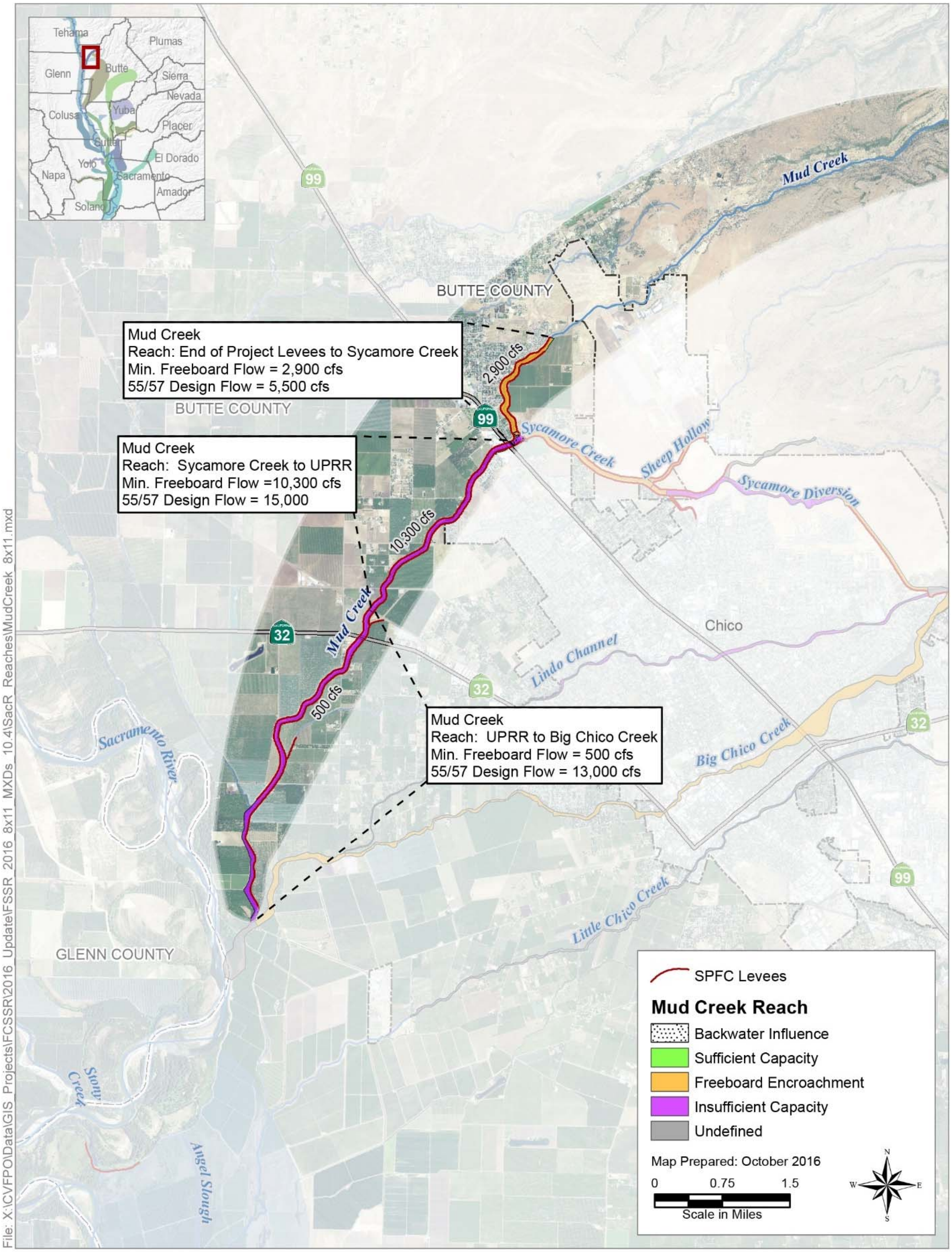


Figure B-13. Mud Creek Capacity Reach Map

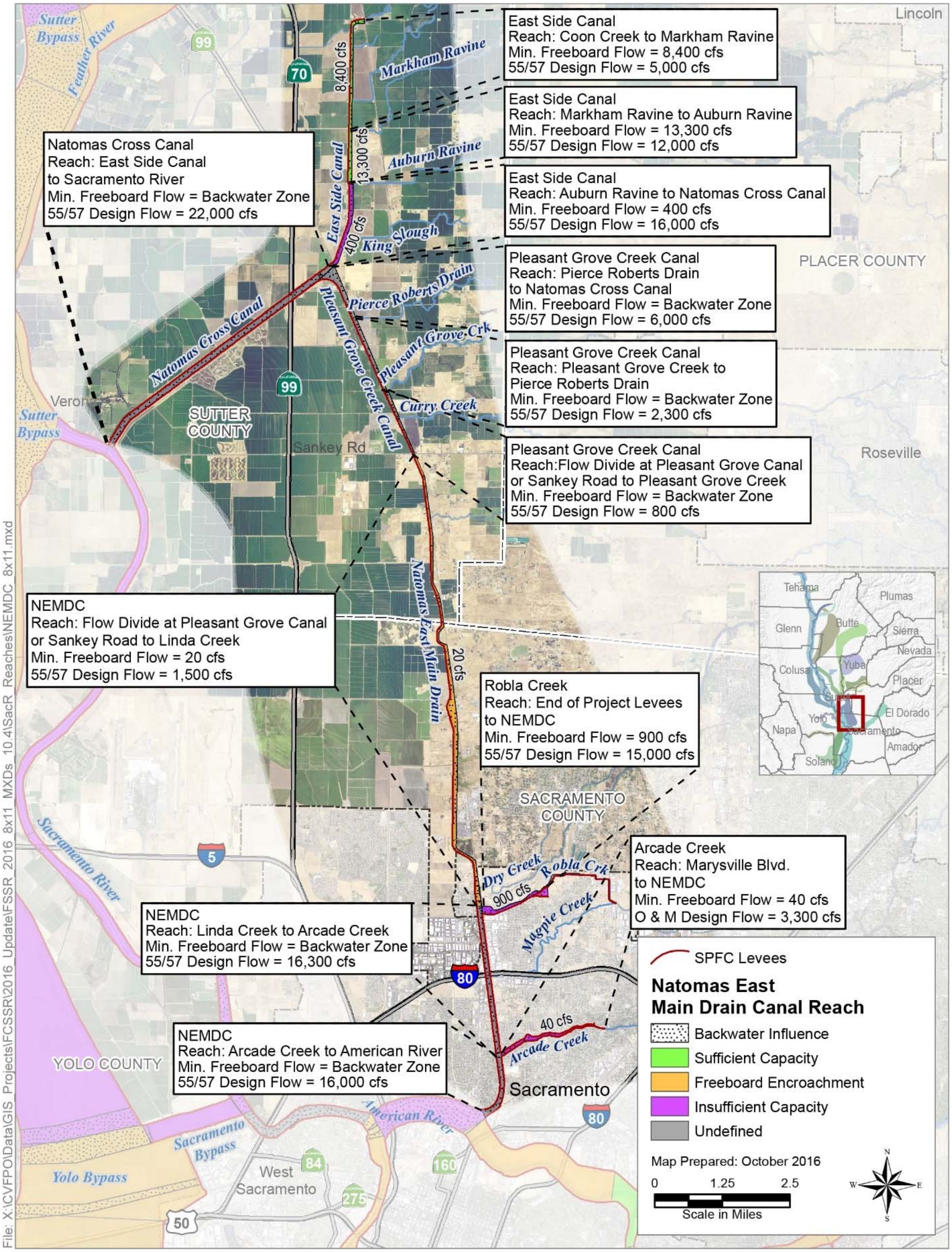


Figure B-14. Natomas East Main Drain Canal Capacity Reach Map

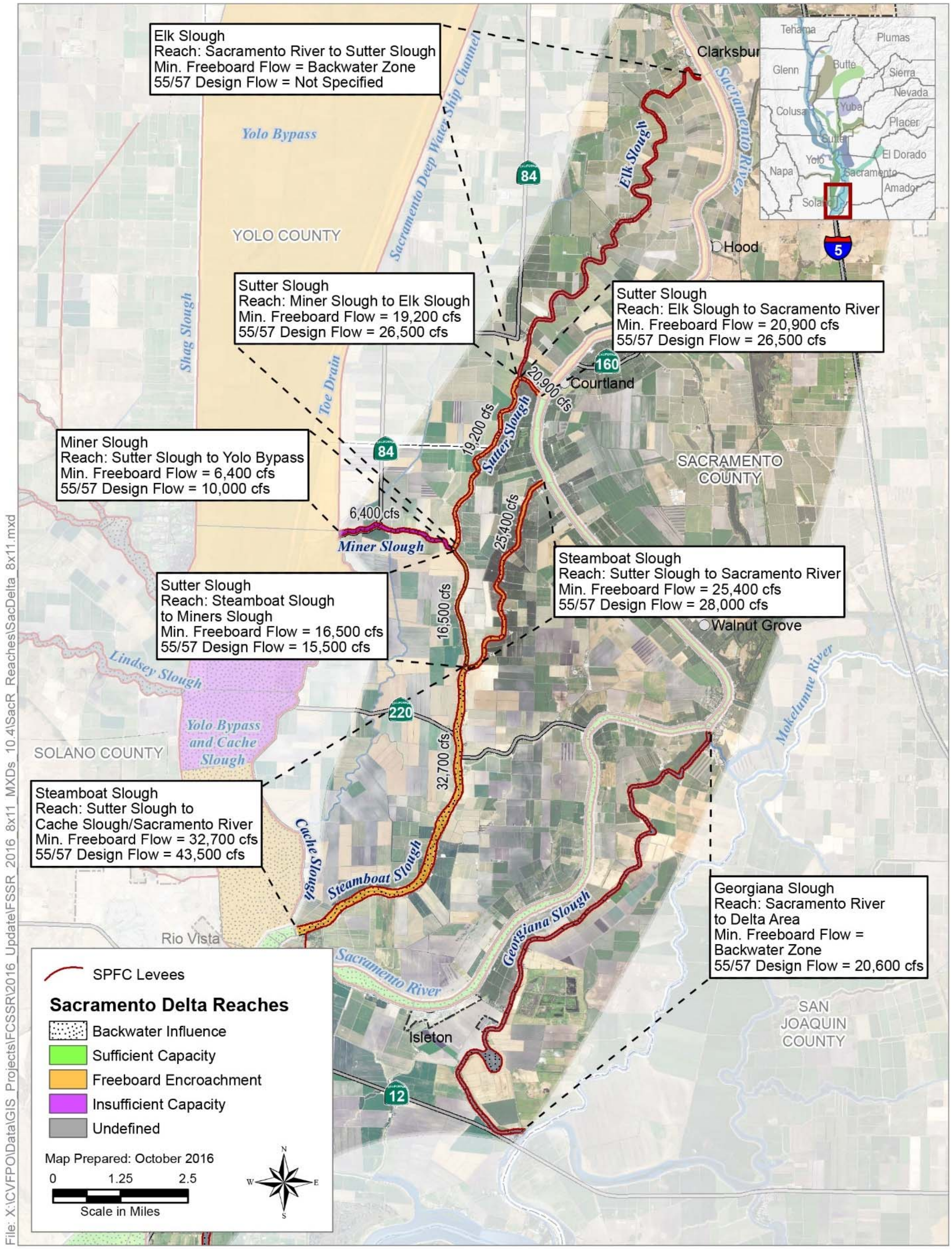
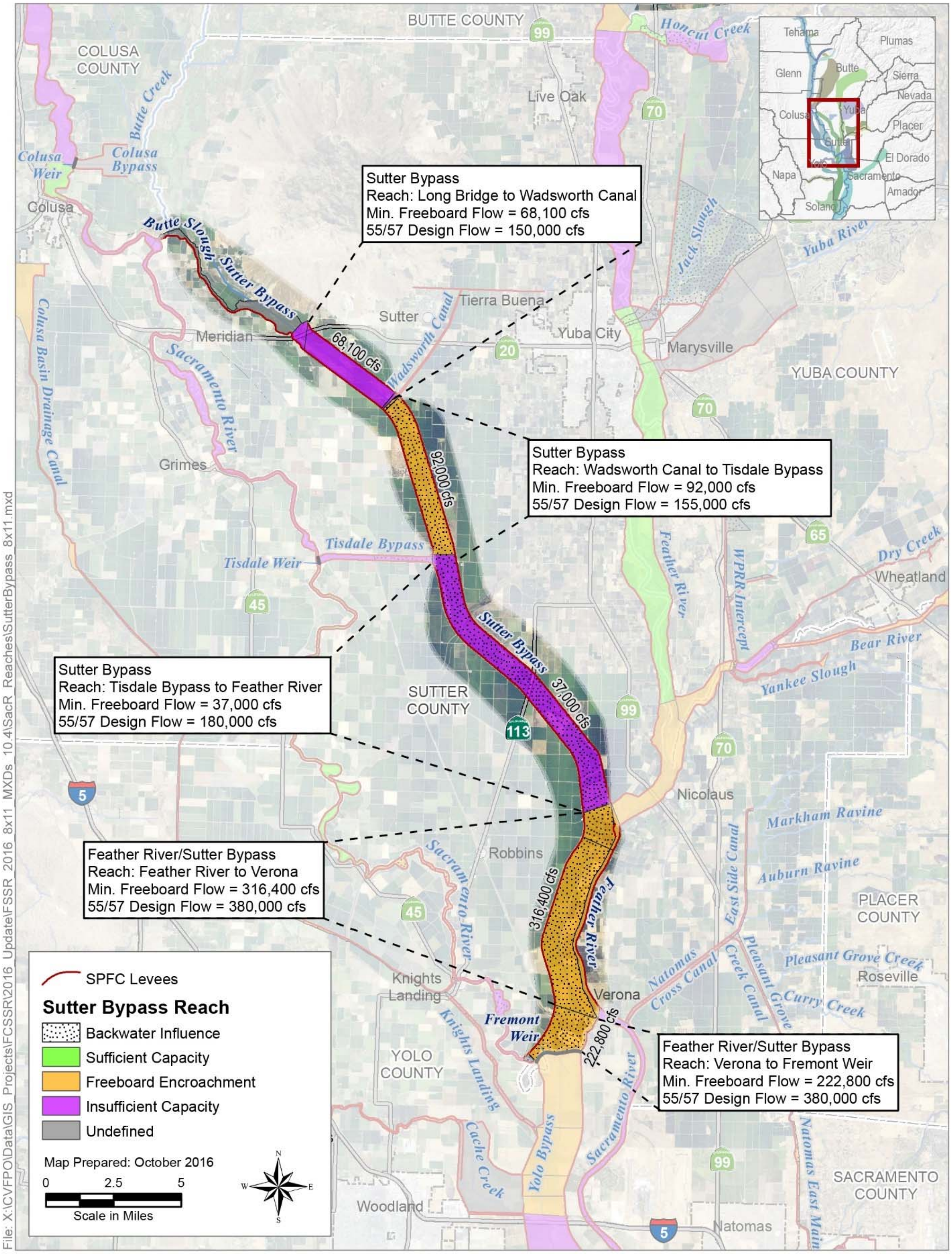


Figure B-15. Sacramento Delta Capacity Reach Map



Sutter Bypass
Reach: Long Bridge to Wadsworth Canal
Min. Freeboard Flow = 68,100 cfs
55/57 Design Flow = 150,000 cfs

Sutter Bypass
Reach: Wadsworth Canal to Tisdale Bypass
Min. Freeboard Flow = 92,000 cfs
55/57 Design Flow = 155,000 cfs

Sutter Bypass
Reach: Tisdale Bypass to Feather River
Min. Freeboard Flow = 37,000 cfs
55/57 Design Flow = 180,000 cfs

Feather River/Sutter Bypass
Reach: Feather River to Verona
Min. Freeboard Flow = 316,400 cfs
55/57 Design Flow = 380,000 cfs

Feather River/Sutter Bypass
Reach: Verona to Fremont Weir
Min. Freeboard Flow = 222,800 cfs
55/57 Design Flow = 380,000 cfs

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Figure B-16. Sutter Bypass Capacity Reach Map

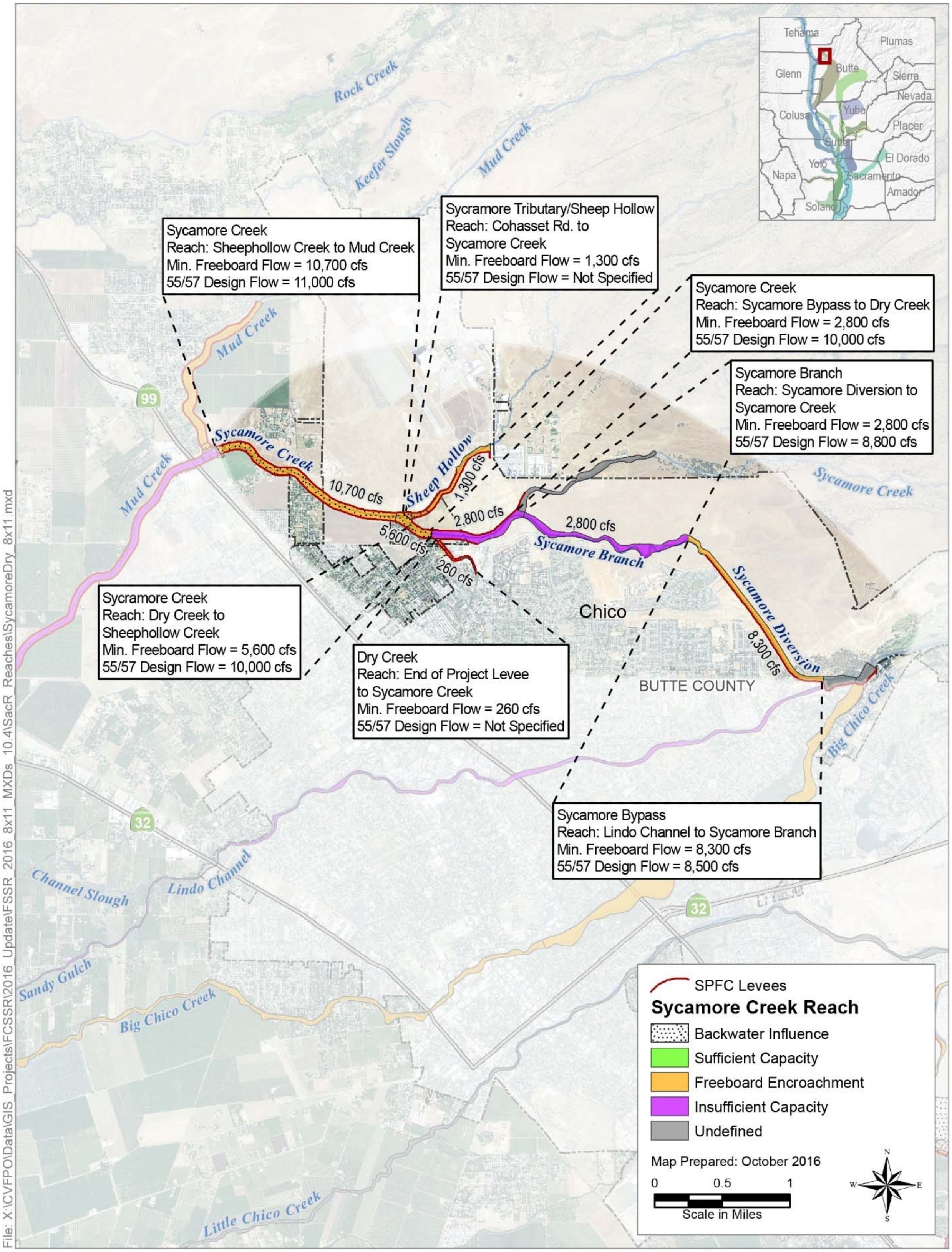


Figure B-17. Sycamore Creek Capacity Reach Map

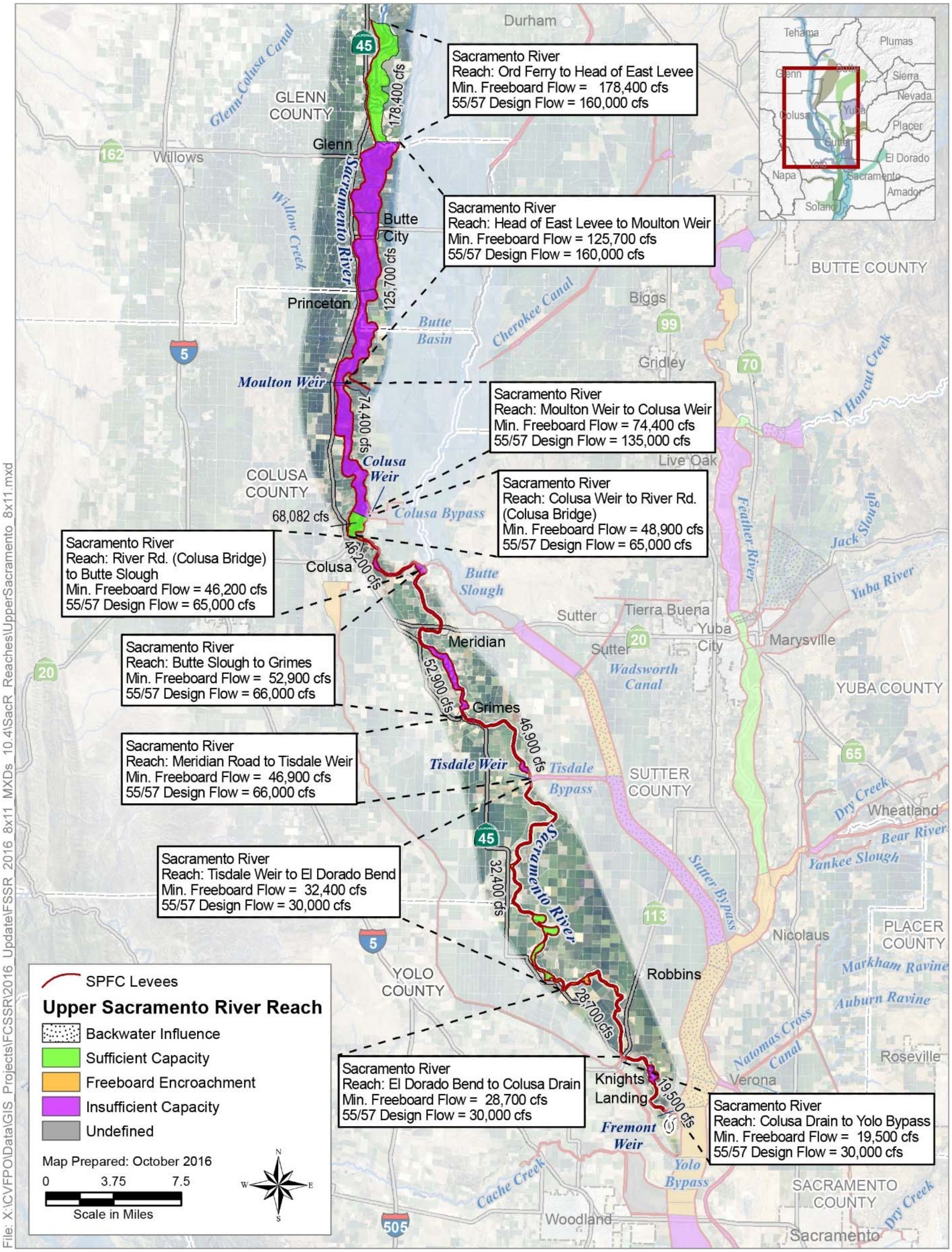


Figure B-18. Upper Sacramento River Capacity Reach Map

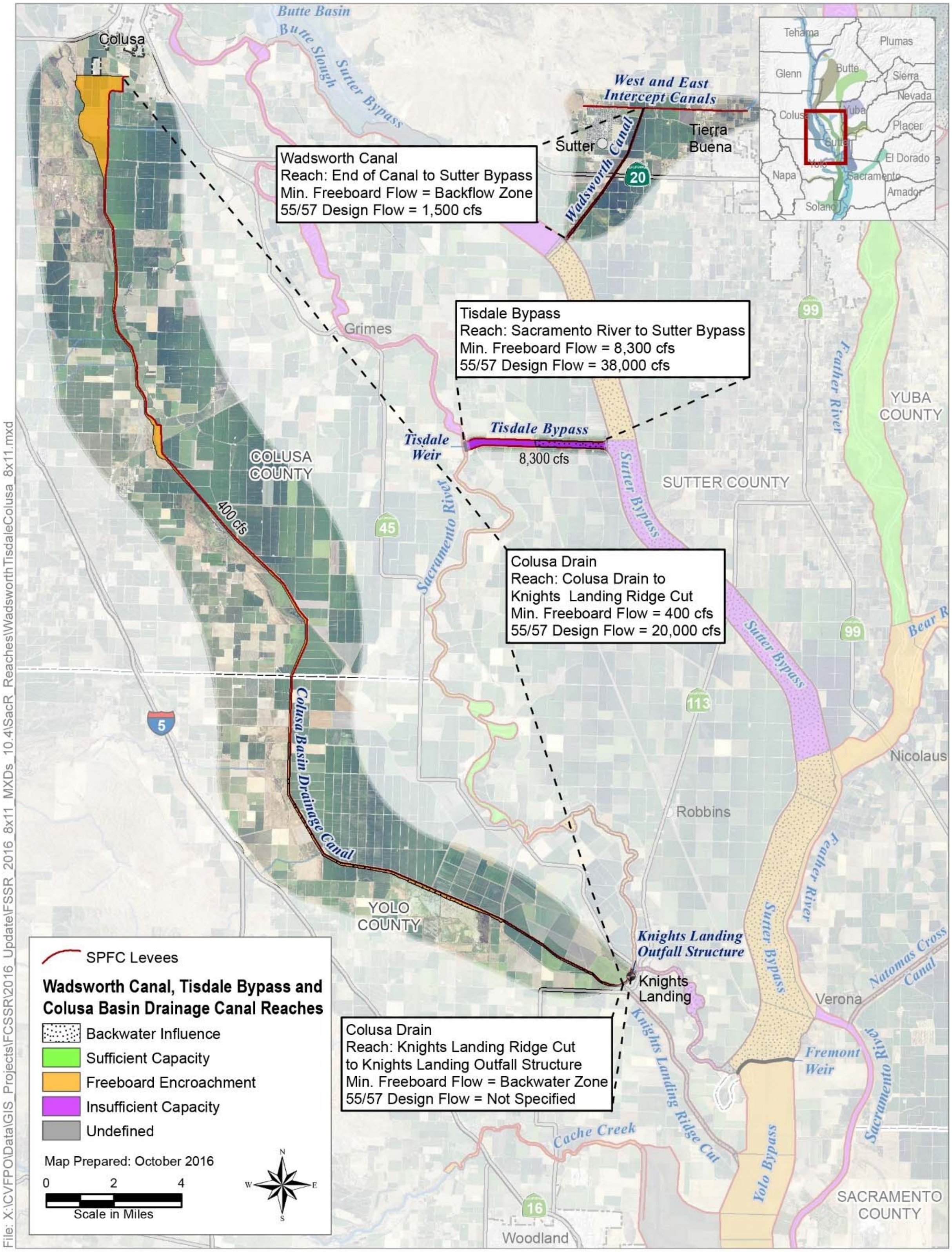


Figure B-19. Wadsworth Canal, Tisdale Bypass, and Colusa Basin Drainage Canal Capacity Reach Map

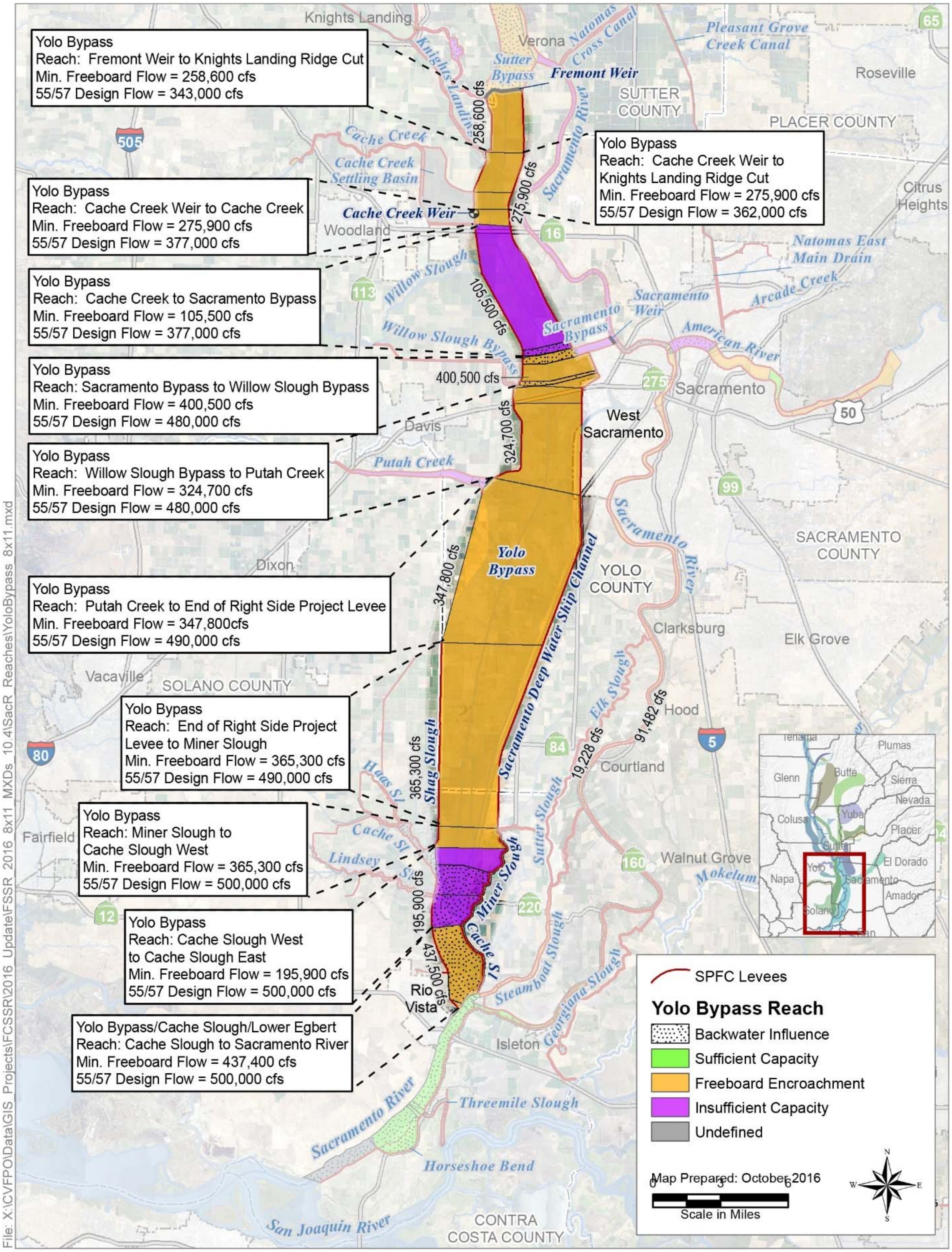


Figure B-20. Yolo Bypass Capacity Reach Map

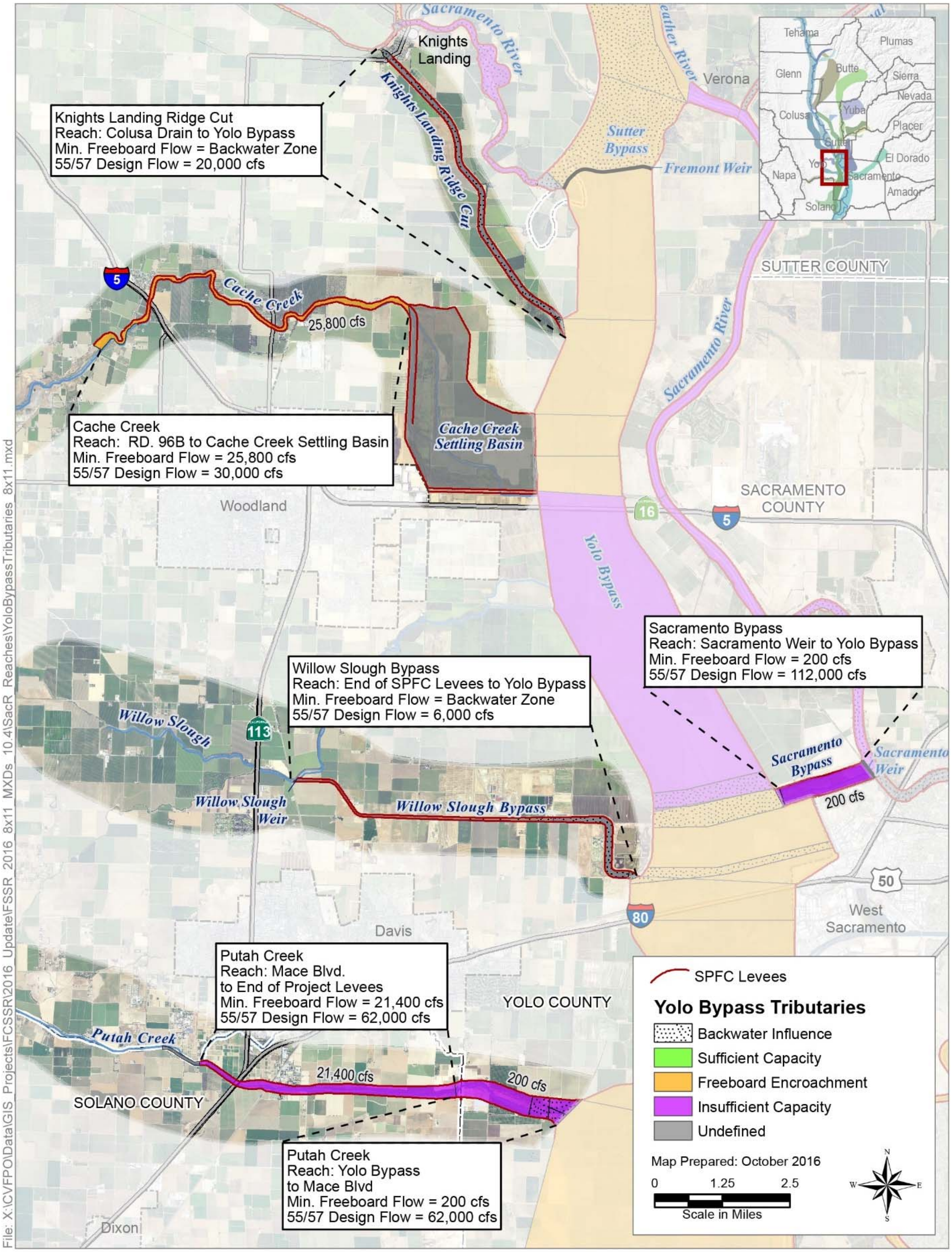
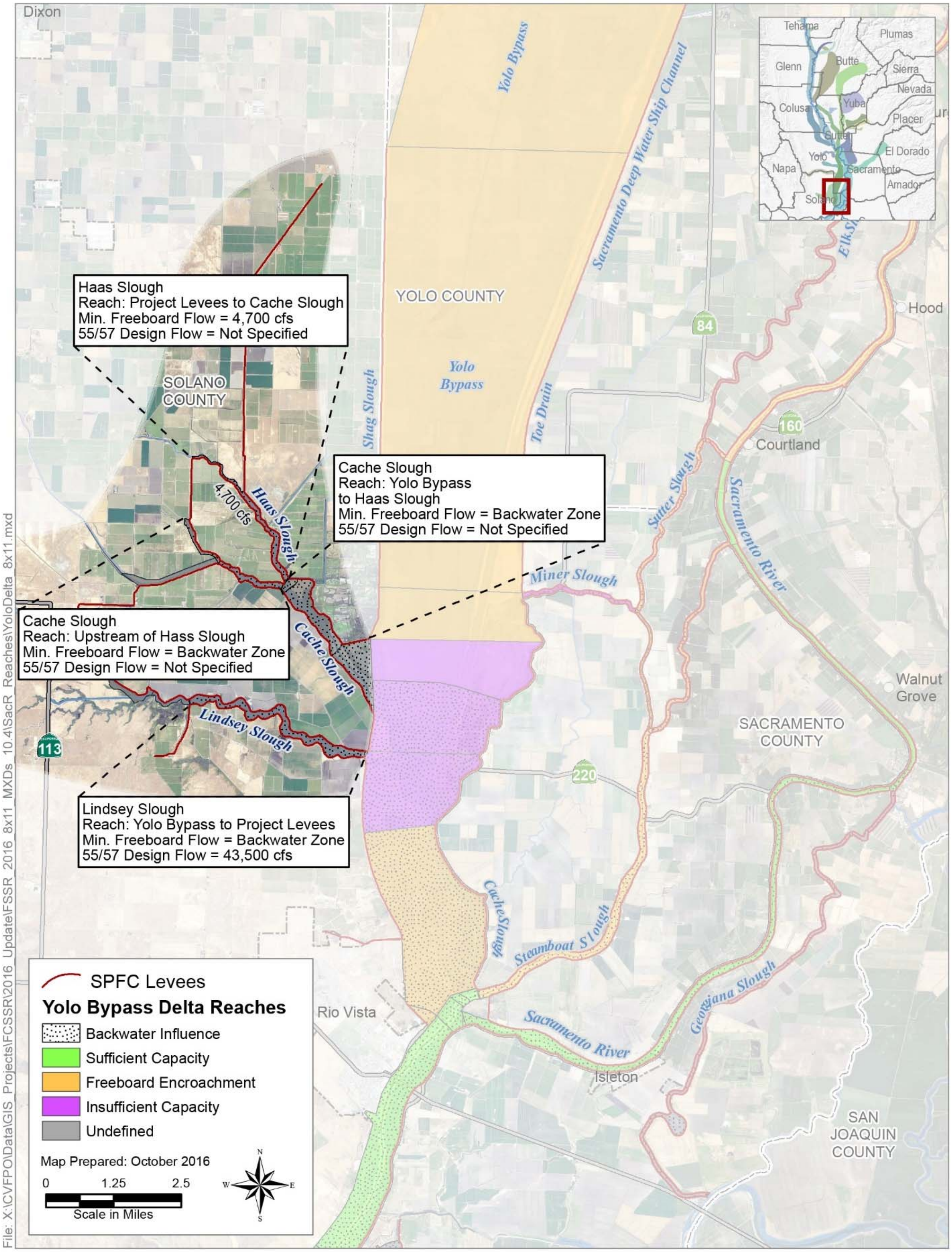


Figure B-21. Yolo Bypass Tributaries Capacity Reach Map



Haas Slough
Reach: Project Levees to Cache Slough
Min. Freeboard Flow = 4,700 cfs
55/57 Design Flow = Not Specified

Cache Slough
Reach: Yolo Bypass
to Haas Slough
Min. Freeboard Flow = Backwater Zone
55/57 Design Flow = Not Specified

Cache Slough
Reach: Upstream of Hass Slough
Min. Freeboard Flow = Backwater Zone
55/57 Design Flow = Not Specified

Lindsey Slough
Reach: Yolo Bypass to Project Levees
Min. Freeboard Flow = Backwater Zone
55/57 Design Flow = 43,500 cfs

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Figure B-22. Yolo Bypass Delta Capacity Reach Map

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Figure B-23. San Joaquin River Watershed Index

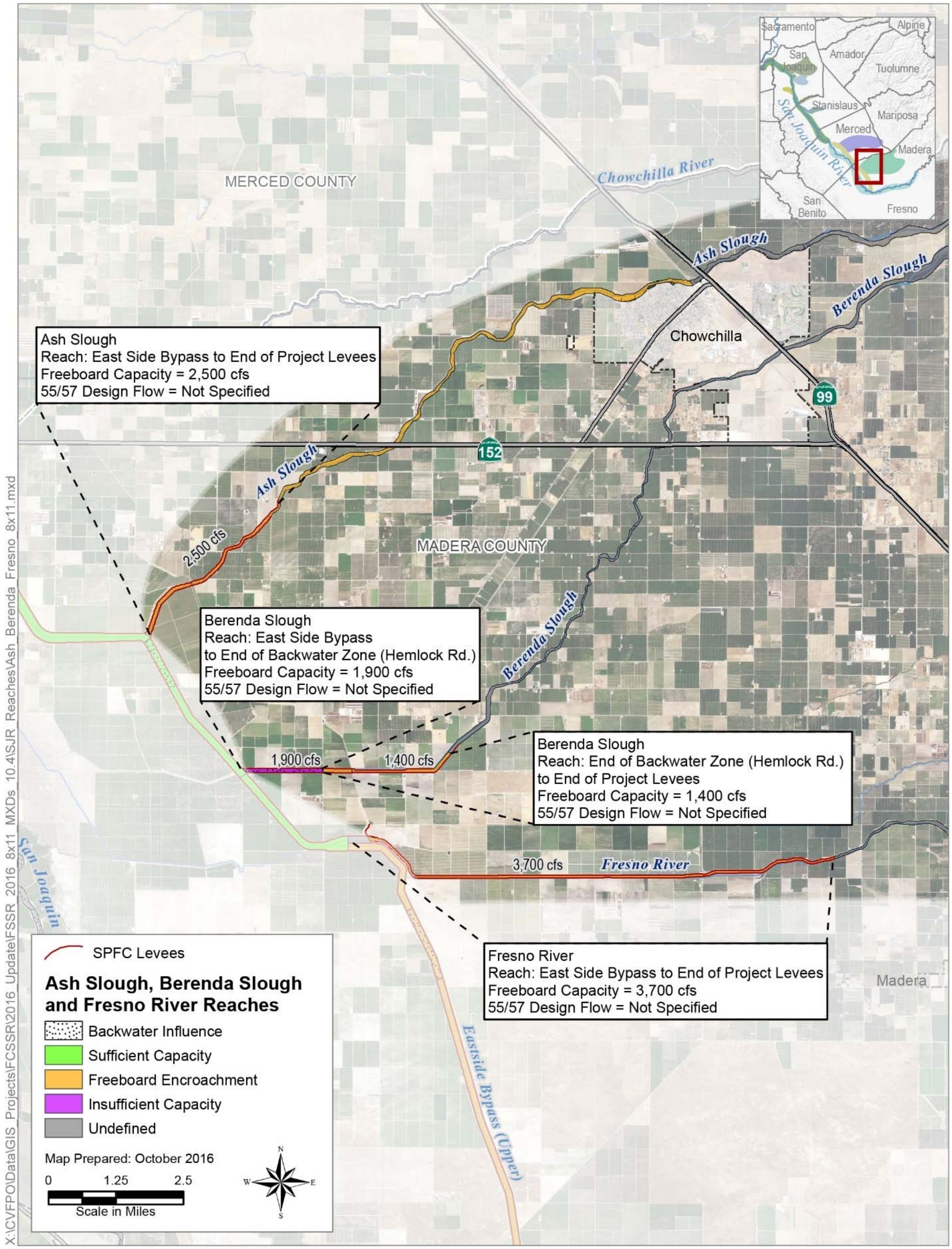

Figure B-24. Ash Slough, Berenda Slough, and Fresno River Capacity Reach Map

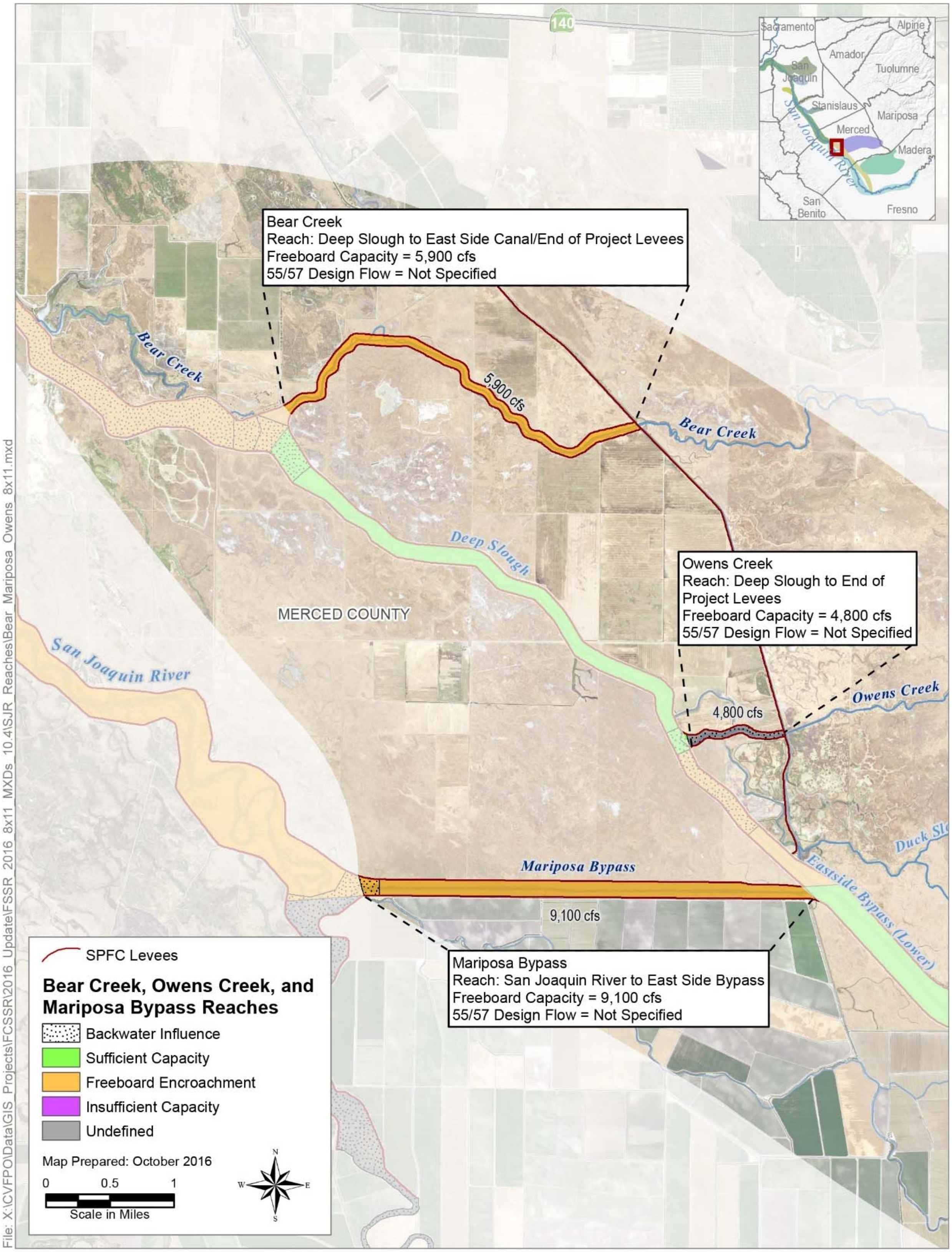

Figure B-25. Bear Creek, Owens Creek, and Mariposa Bypass Capacity Reach Map

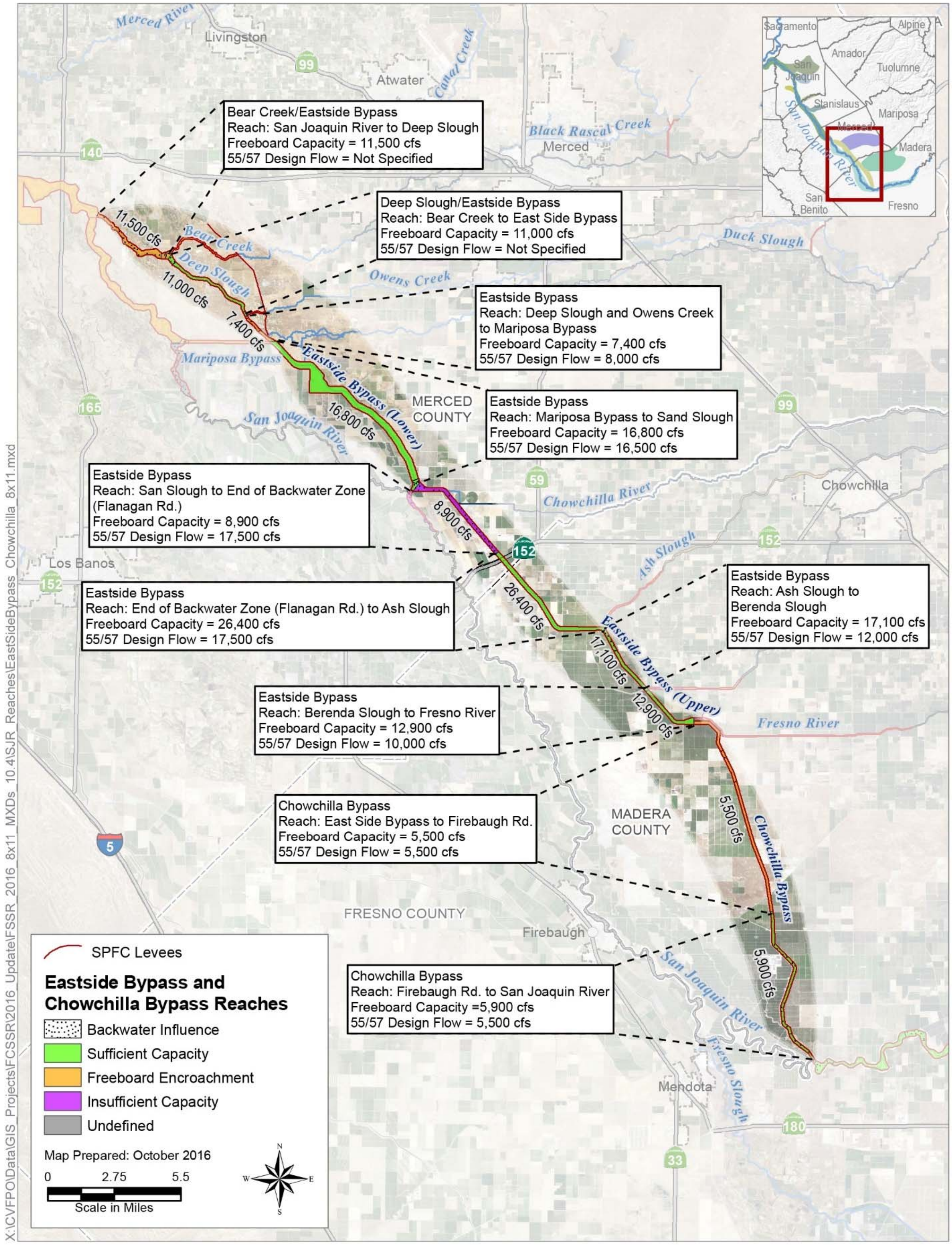

Figure B-26. Eastside Bypass and Chowchilla Bypass Capacity Reach Map

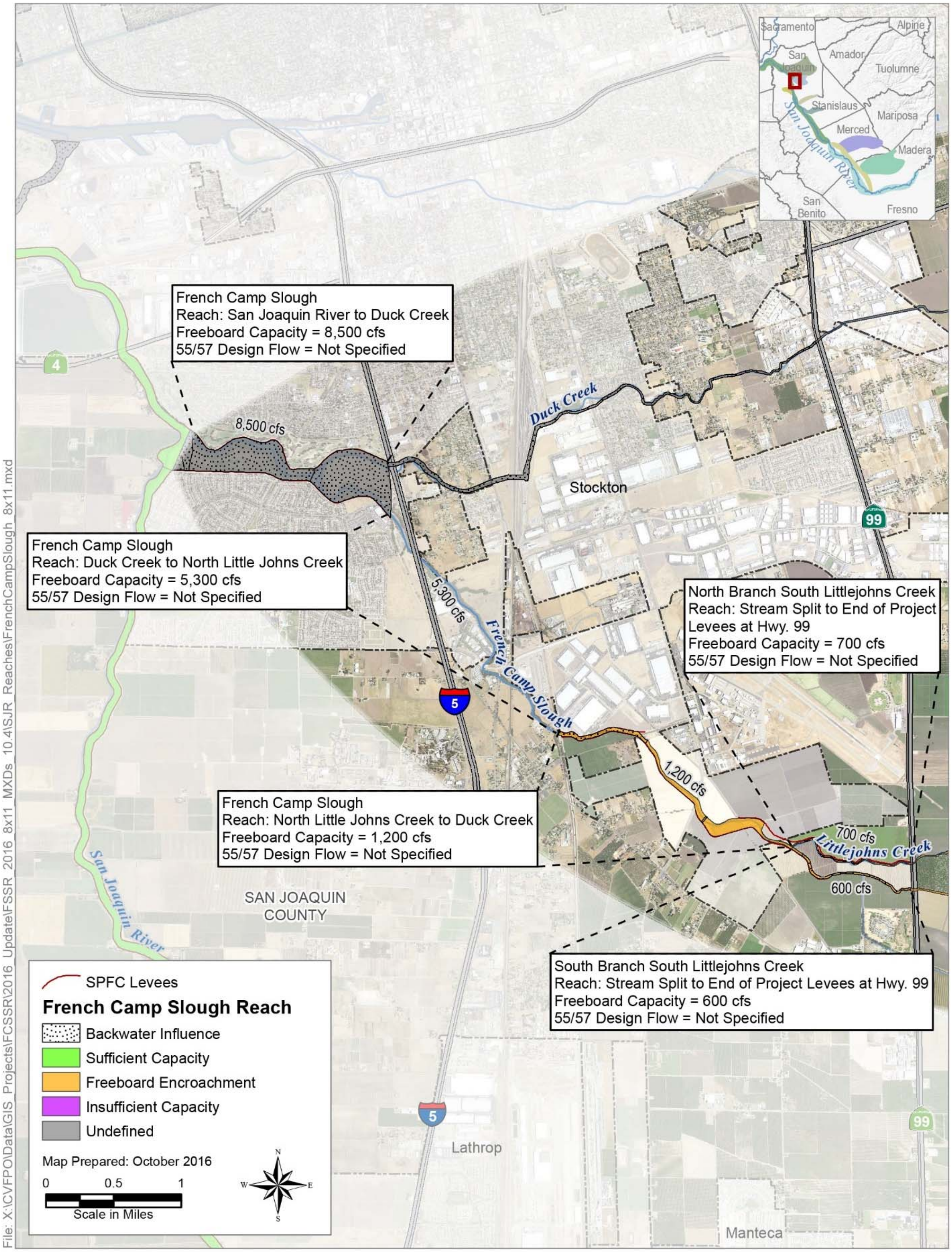

Figure B-27. French Camp Slough Capacity Reach Map

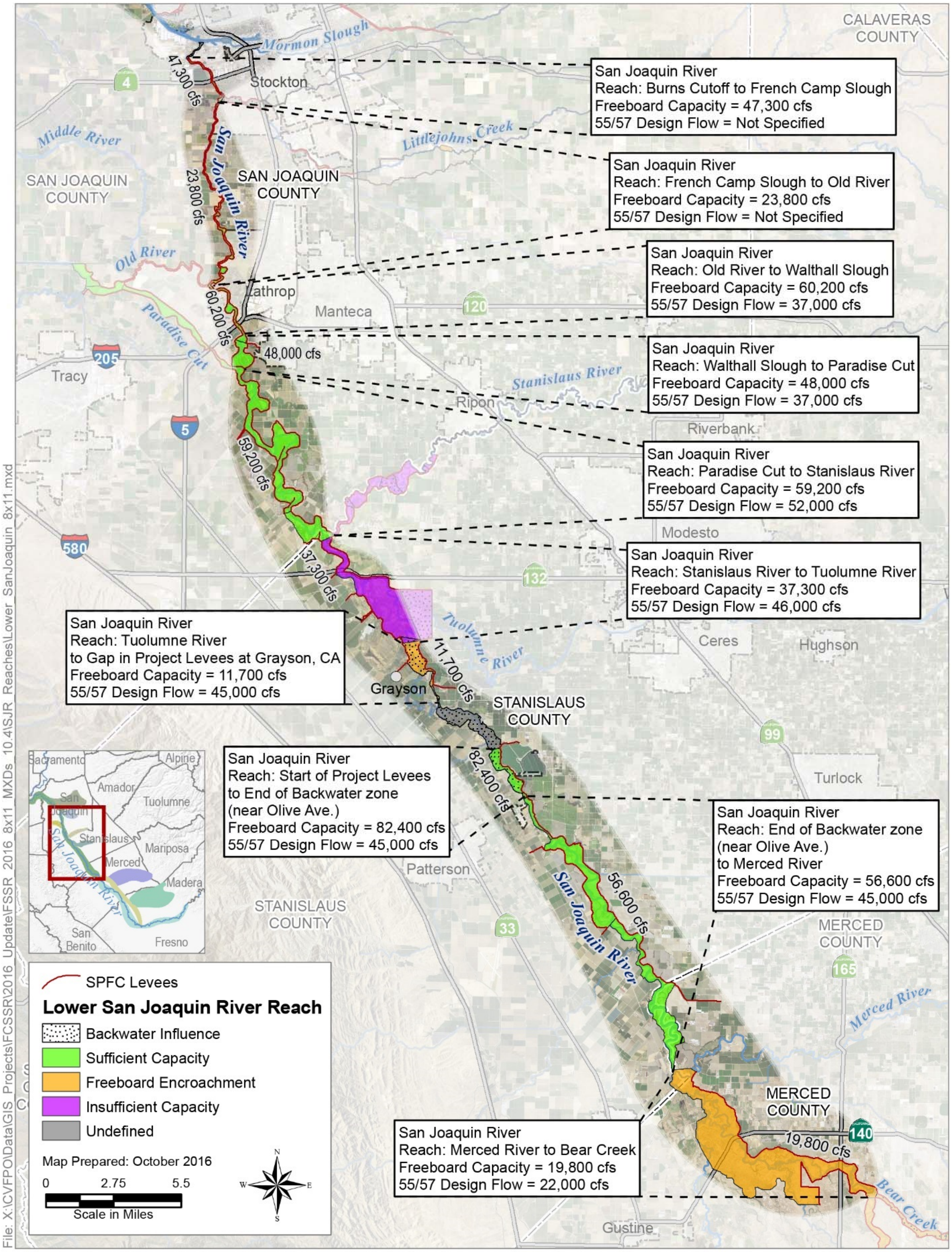

Figure B-28. Lower San Joaquin River Capacity Reach Map

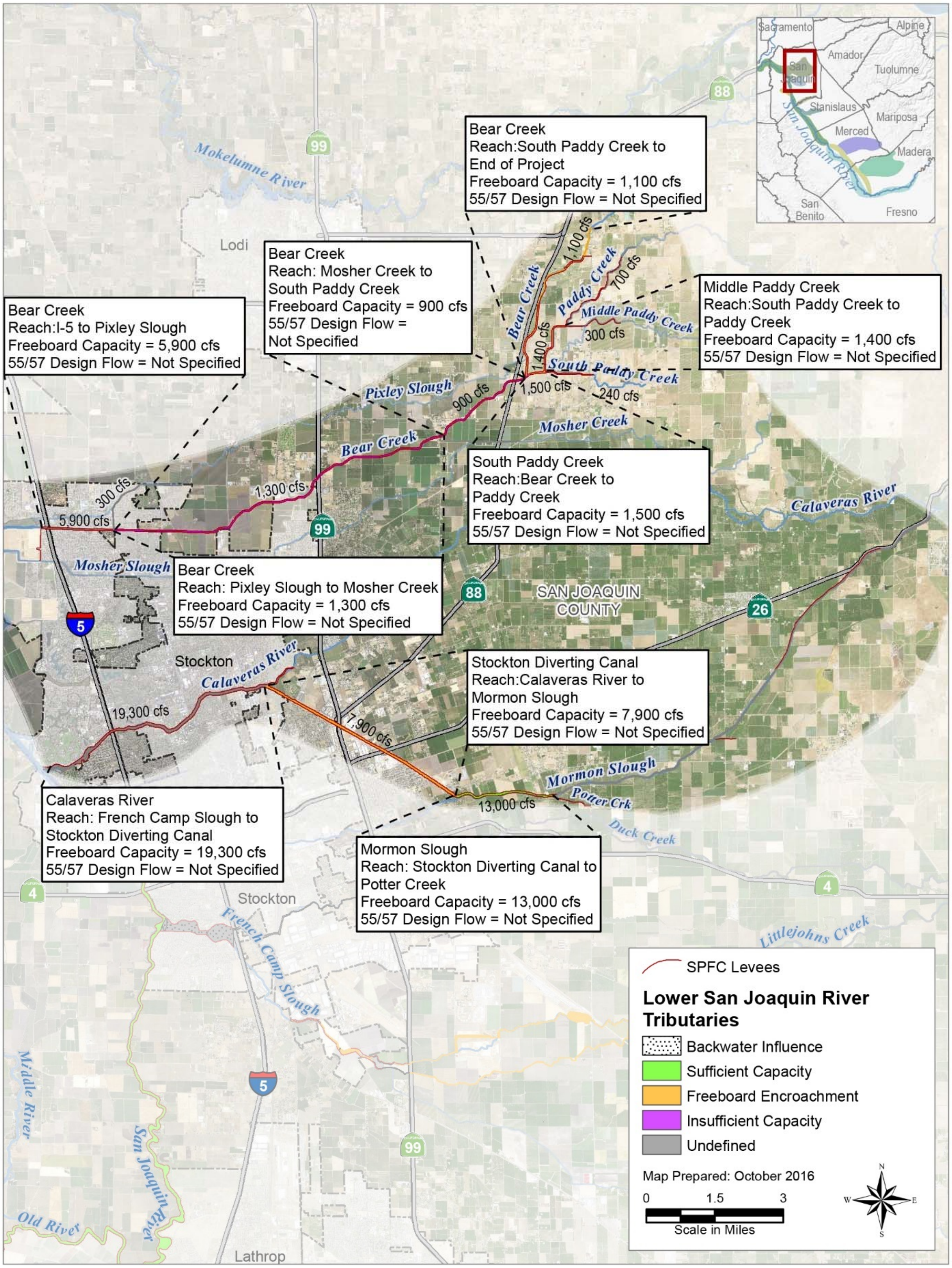

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Figure B-29. Lower San Joaquin River Tributaries Capacity Reach Map

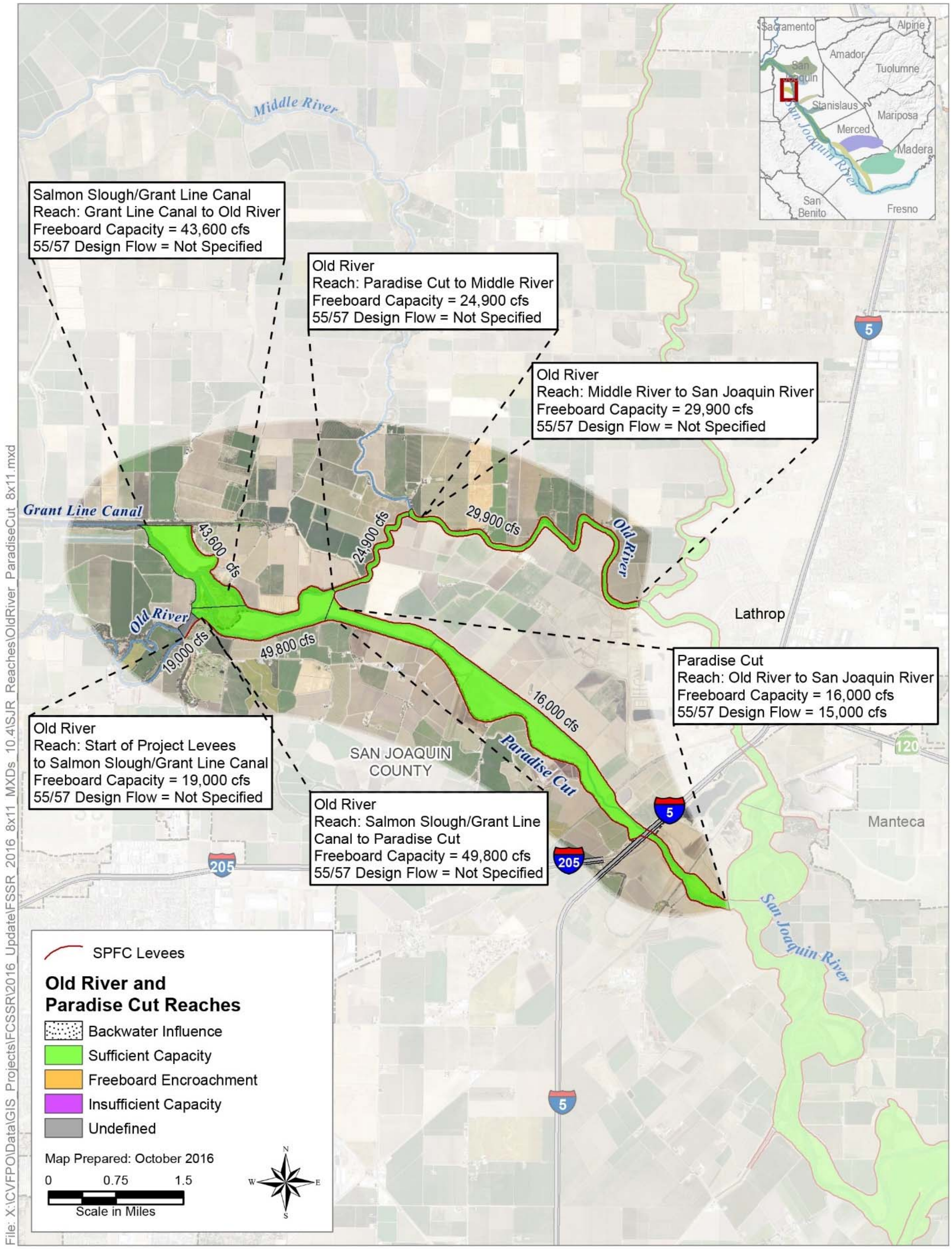

Figure B-30. Old River and Paradise Cut Capacity Reach Map

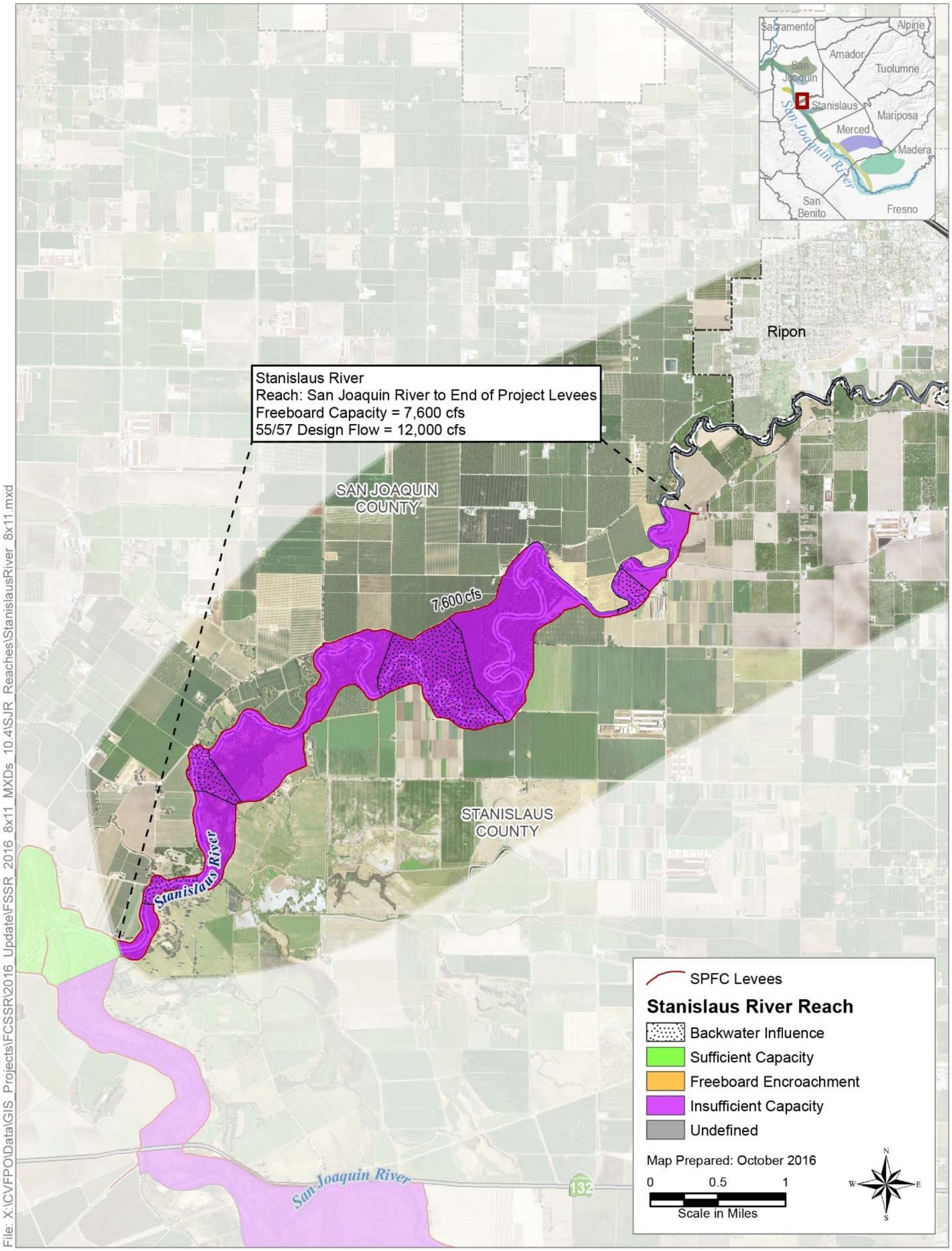

Figure B-31. Stanislaus River Capacity Reach Map

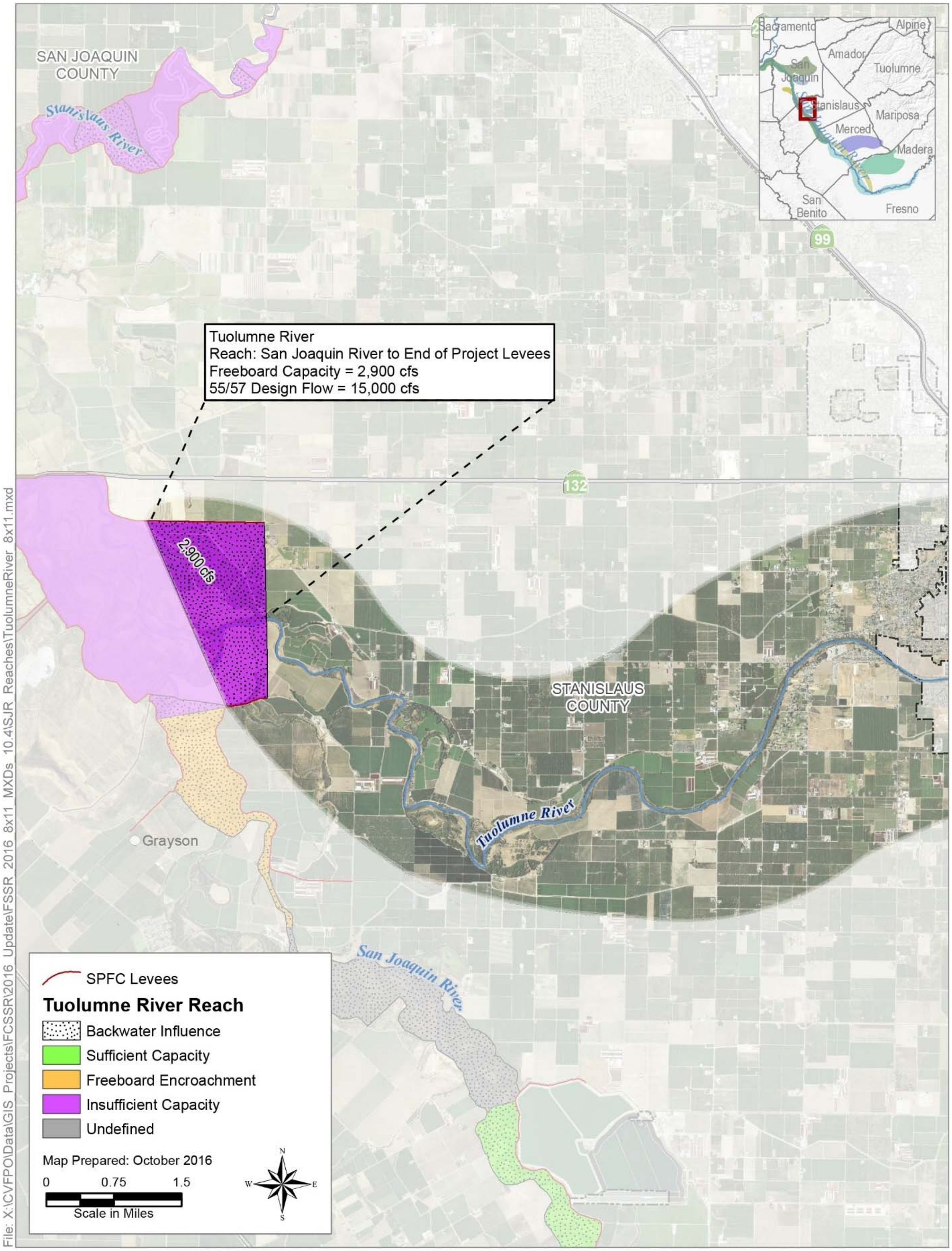

Figure B-32. Tuolumne River Capacity Reach Map

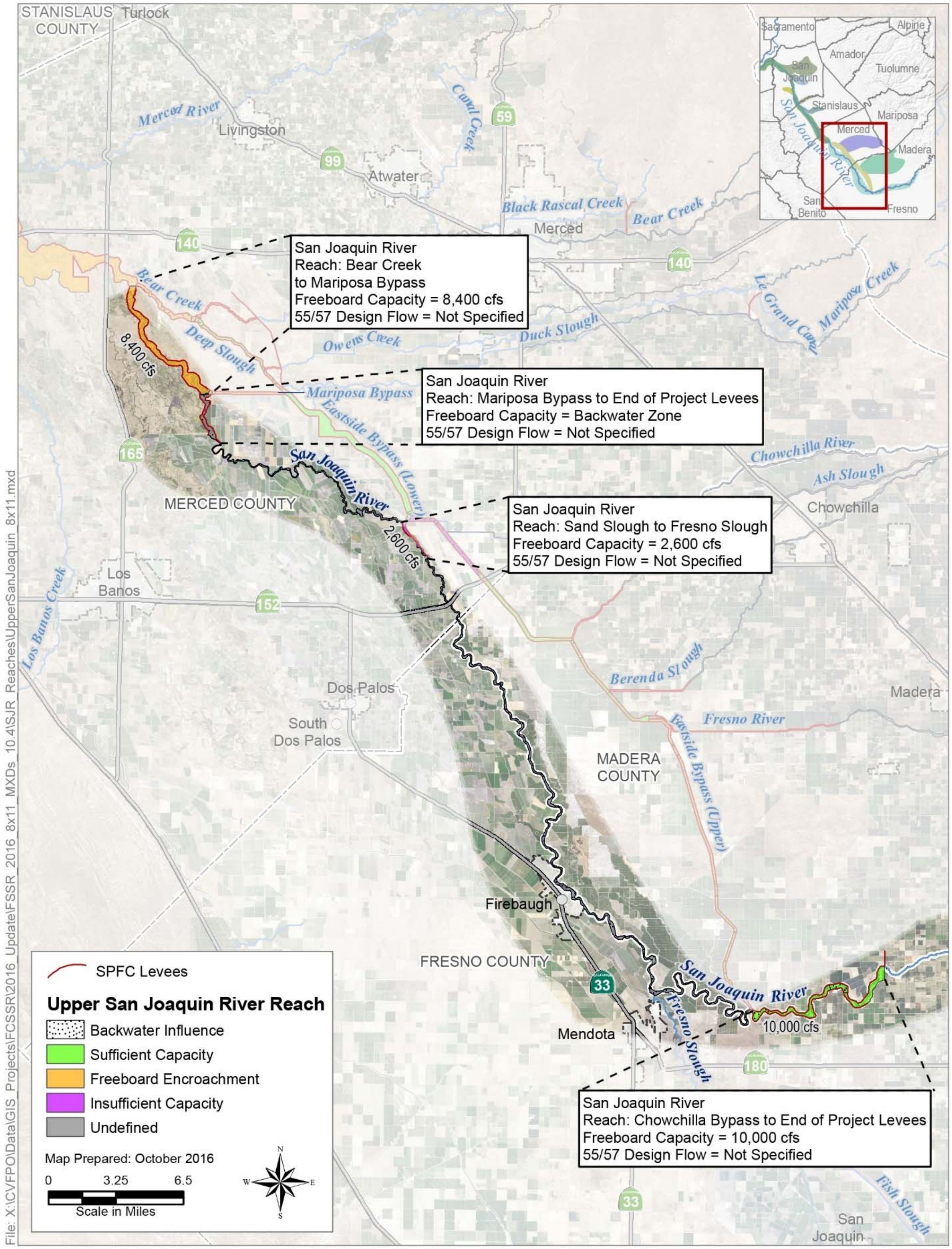

Figure B-33. Upper San Joaquin River Capacity Reach Map

B.4 References

Channel Capacity Evaluation for the Sacramento and San Joaquin River Systems, (Admin. Draft 3/18/2015), State of California Department of Water Resources.

Butte Creek Watershed Conservancy. 2005. Butte Creek Watershed Floodplain Management Plan. Prepared by Wood Rodgers. May.

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Nature Conservancy. 2007. Two-Dimensional Hydraulic modeling of Riparian Habitat Restoration from Colusa to Princeton. Sacramento River, RM 142.5 to 164.5. Glenn and Colusa Counties, CA. Prepared by Ayres Associates. December 3.

Reclamation Board (Board). 1986. Environmental Impact Report for the Butte Basin Overflow Area. Prepared by Woodward-Clyde Consultants. Record # ES-256. December.

United States Army Corps of Engineers (USACE). 1955. Design Memorandum No. 1, San Joaquin River Levees, Lower San Joaquin River and Tributaries Project, California, General Design. December 23.

———.1957. Sacramento River Flood Control Project, California, Levee and Channel Profiles. March 15. Revised August 1969. Created 2006.

United States Geological Survey (USGS). 1976. Determination of Channel Capacity of the Sacramento River between Ordbend and Glenn, Butte and Glenn Counties, California. Prepared by R. G. Simpson. Open-File Report 76-526.

United States Army Corps of Engineers and California Department of Water Resources (USACE and DWR). 2002. Sacramento-San Joaquin River Basins Comprehensive Study, Technical Studies Documentation, Appendix D Hydraulic Technical Documentation. December.

B.5 Acronyms and Abbreviations

DWR	California Department of Water Resources
FSSR	Flood System Status Report
LiDAR	Light Detection and Ranging
O&M	operations and maintenance
SPFC	State Plan of Flood Control
USACE	United States Army Corps of Engineers

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Appendix C – Flood Control Structure Status

August 2017

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

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Table of Contents

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Appendix C – Flood Control Structure Status

This appendix provides supporting information about hydraulic structures, pumping plants, and bridges relative to flood management for the State Plan of Flood Control (SPFC). Sections C-1, C-2, and C-3 correspond to subsections in Section 6.0 of the 2017 Flood System Status Report (FSSR) main document. This appendix also includes information on recent, ongoing, and planned remedial actions for these structures. Information about ongoing actions to improve future evaluations is also summarized.

C.1 Hydraulic Structures

This section describes recent, ongoing, and planned remedial actions for SPFC hydraulic structures. It also describes actions to improve evaluation of hydraulic structures in the future.

C.1.1 Summary of Recent Remedial Actions

No recent major remedial actions for SPFC hydraulic structures have been documented by the California Department of Water Resources (DWR).

C.1.2 Summary of Ongoing and Planned Remedial Actions

Ongoing and planned remedial actions for SPFC hydraulic structures by DWR include the following:

- **Cache Creek Settling Basin** – A 3-year study is currently underway to determine the Cache Creek Settling Basin trapping efficiency. The Cache Creek Settling Basin Weir will not be inspected until after the study is completed.

- **Willow Slough Weir and Weir 2**–Willow Slough Weir (Sutter Bypass East Borrow Canal) was replaced in 2011. Weir 2 will be replaced in 2012.

- **Knights Landing Outfall Gates** – Motor controls and communications systems are not functioning, and structural materials are deteriorating. Rehabilitation of the Knights Landing Outfall Gates is anticipated to begin in 2012. The outfall gates, motor controls, and communications system will be replaced.

- **Butte Slough Outfall Gates** – A detailed inspection of the Butte Slough Outfall Gates was performed in 2008. A Capital Outlay Budget Change Proposal for Fiscal Years 2010 and 2011 is under consideration to correct the problems found.

C.1.3 Ongoing Actions to Improve Future Evaluations

Under the FloodSAFE California (FloodSAFE) Initiative, DWR has recently created a more robust and thorough inspection program for hydraulic structures (DWR, 2010). The Hydraulic Structures Inspection Program has been established to better track the inspections and maintenance work performed on structures maintained by DWR.

Initial actions of the program involved identifying and cataloging historical records (inspection records, record drawings, operations criteria, operations and maintenance (O&M) manuals, etc.) of all hydraulic structures, and updating the existing inspection procedures in accordance with current United States Army Corps of Engineers (USACE) standards. It is expected that biannual inspections and repairs will continue to improve performance of the existing hydraulic structures.

DWR produces Annual Inspection Reports outlining prioritized repairs by June 1. Structures identified are targeted to be repaired between June and November. Before November of each year, the structures will be inspected to document the repairs completed before flood season.

C.2 Pumping Plants

This section describes recent, ongoing, and planned remedial actions for SPFC pumping plants. It also describes actions to improve evaluations of pumping plants in the future.

C.2.1 Summary of Recent Remedial Actions

A project was completed in November 2007 to refurbish the pump motors for each pump at the three pumping plants along the east levee of the Sutter Bypass. The refurbishments were considered in the 2009 inspection results reported in Section 6.0 of the 2017 FSSR main document. In 2011, DWR recently completed a project to provide backup power generators and fuel tanks at each of these three pumping plants in the Sutter Bypass. The project also included a remote communications system that enabled automated pump controls from the Sutter Maintenance Yard.

C.2.2 Summary of Ongoing and Planned Remedial Actions

No major ongoing and planned remedial actions for SPFC pumping plants have been documented by DWR.

C.2.3 Ongoing Actions to Improve Future Evaluations

The Hydraulic Structures Inspection Program described above also includes inspection of pumping plants. In addition, DWR is installing new communication and data relay systems with new control systems that will enable real-time monitoring of pumping plants. This technology will allow DWR to track pump efficiencies and discover maintenance problems as they arise.

C.3 Bridges

This section describes recent, ongoing, and planned remedial actions for SPFC bridges maintained by DWR. It also describes actions to improve evaluations of bridges in the future.

C.3.1 Summary of Recent Remedial Actions

Recent remedial actions for SPFC bridges maintained by DWR include the following:

- The decking of several of the collecting canal and intercepting canal bridges in Sutter County have been refurbished since 2003.
- McKee Lane at Western Intercepting Canal (WI-2), maintained by DWR, has been replaced.
- The following bridges maintained by Sutter County have also been replaced in coordination with DWR:
    - Garmire Bridge at Tisdale Bypass
    - Franklin Road Bridge at Wadsworth Canal
    - South Butte Road Bridge at Wadsworth Canal
    - Butte House Road Bridge at Wadsworth Canal
    - Acacia Avenue Bridge at Western Intercepting Canal
    - Mallott Road Bridge at Western Intercepting Canal
    - East Butte Road Bridge at Eastern Intercepting Canal
    - Pease Road Bridge at Eastern Intercepting Canal
    - Township Road Bridge at Eastern Intercepting Canal
    - Obanion Road Bridge at Collecting Canal/State Drain
    - Oswald Road Bridge at West Borrow Canal
    - Franklin Road Bridge at West Borrow Canal

These recent remedial actions were reflected in the 2009 inspection results reported in Section 6.0 of the 2017 FSSR main document.

C.3.2 Summary of Ongoing and Planned Remedial Actions

Ongoing and planned remedial actions include the following:

- Bridge EL-1A has been designated as a bridge needing repair. The bridge decking will be replaced as soon as funding is appropriated.
- Bridge CC-4 has been designated as a bridge needing immediate repair. The bridge decking and abutments will be refurbished as soon as funding is appropriated.

C.3.3 Ongoing Actions to Improve Future Evaluations

Under the FloodSAFE Initiative, DWR has recently created a more robust and thorough inspection program for DWR-maintained bridges to better track the inspections and maintenance work performed on bridges by DWR (DWR, 2009).

Similar to the Hydraulic Structures Inspection Program, DWR produces an Annual Bridge Inspection Report (DWR, 2009) outlining a prioritized list of needed repairs in June. Bridges identified on the list are targeted for repair between June and November, and inspections are performed before November on bridges to document repairs.

C.4 References

California Department of Water Resources (DWR). 2009. Annual Bridge Inspection Report. Flood Maintenance Office (FMO). December 10.

———.2010. Annual Hydraulic Structure Inspection Report. Flood Maintenance Office (FMO). April 7.

C.5 Acronyms and Abbreviations

AB	Assembly Bill
CCR	California Code of Regulations
CVFED	Central Valley Floodplain Evaluation and Delineation Program
CVFPP	Central Valley Flood Protection Plan
DFG	California Department of Fish and Game (now California Department of Fish and Wildlife)
DFW	California Department of Fish and Wildlife (formerly California Department of Fish and Game)
DWR	California Department of Water Resources
EC	Engineer Circular
EM	Engineer Manual
ETL	Engineer Technical Letter
FEMA	United States Federal Emergency Management Agency
FMO	Flood Maintenance Office
FSRP	Flood System Repair Project
FSSR	Flood System Status Report
FloodSAFE	FloodSAFE California
GIS	geographic information system
NULE	Nonurban Levee Evaluations Project
O&M	operations and maintenance
PL	Public Law
SEEP/W	finite element computer-aided design software for analyzing groundwater seepage and excess pore-water pressure dissipation problems in porous materials such as soil and rock; developed by GEOSLOPE, International
SPFC	State Plan of Flood Control
UCIP	Utility Crossings Inspection Program
ULE	Urban Levee Evaluations Project
USACE	United States Army Corps of Engineers
URS	URS Corporation
VMS	Vegetation Management Strategy
VMZ	vegetation management zone

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