

This chapter describes the environmental setting and study area for cultural resources; analyzes impacts that could result from construction, operation, and maintenance of the project; and provides mitigation measures to reduce the effects of potentially significant impacts. This chapter also analyzes the impacts that could result from implementation of compensatory mitigation required for the project and describes any additional mitigation necessary to reduce those impacts, and analyzes the impacts that could result from other mitigation measures associated with other resource chapters in this Draft Environmental Impact Report (Draft EIR).

19.0 Summary Comparison of Alternatives

Table 19-0 provides a summary comparison of important impacts on cultural resources by alternative. The table presents the CEQA findings after all mitigation is applied. If applicable, the table also presents quantitative results after all mitigation is applied. Important impacts to consider include those significant and unavoidable impacts that would permanently impact cultural resources. The analysis in this chapter is supported by Appendices 19A through 19D. Appendix 19A is the *Historical Resources Survey and Evaluation Report* for the project, which is a public appendix, and Appendix 19B is the *Archaeological Sensitivity Analysis Report*, which is a confidential appendix. Appendices 19C and 19D are public, and respectively are titled *Impact Analysis of Project Alternatives on Built-Environment Historical Resources* and *Impact Analysis of Project Alternatives on Archaeological Resources*.

The construction of the water conveyance features would occur in the vicinity of built-environment historical resources that are scattered along the alignment for the alternatives. Such activities would result in significant impacts on historical resources when they would result in material impairment of the qualities that qualify it as a historical resource. This can include physical changes ranging from demolition to introduction of incompatible features in the setting of the historical resources. For quantifiable impacts, Table 19-0 provides a breakdown for each alternative of how many of the resources that would experience significant impacts could have those impacts reduced to a less-than-significant level through mitigation and how many would remain significant and unavoidable.

All alignments are located within the Delta, an area with high sensitivity for built-environment cultural resources. The central alignment alternatives (Alternatives 1, 2a, 2b, and 2c) have 27 or 28 built-environment historical resources that would be affected by the construction of water conveyance features. The eastern alignment alternatives (Alternatives 3, 4a, 4b, and 4c) have 20 built-environment historical resources that would be affected by the construction of water conveyance features. The eastern alignment alternatives would have fewer impacts on built-environment historical resources because of the placement of the alignment. The Bethany Reservoir alignment (Alternative 5) has 17 built-environment historical resources that would be affected by the construction of water conveyance features.

Construction of the water conveyance features would occur in the vicinity of archaeological resources that occur within the study area. The central alignment alternatives (Alternatives 1, 2a, 2b, and 2c) have 27 to 30 archaeological resources that would be affected by the construction of

1 water conveyance features. Of the central alignment alternatives, Alternative 2a would cause the
2 greatest number of impacts, largely from the construction of Intake A. The eastern alignment
3 alternatives (Alternatives 3, 4a, 4b, and 4c) would have fewer impacts on archaeological resources
4 because of the placement of shafts along the alignment. All alignments are located within the Delta,
5 an area with high sensitivity for archaeological resources. The eastern alignment alternatives have
6 18 to 22 archaeological resources that would be affected by the construction of water conveyance
7 features. Of the eastern alignment alternatives, Alternative 4a would affect the greatest number of
8 resources, largely from the construction of Intake A. The Bethany Reservoir alignment (Alternative
9 5) has 13 archaeological resources that would be affected by the construction of water conveyance
10 features.

11 Table ES-2 in the Executive Summary provides a summary of all impacts disclosed in this chapter.

1 **Table 19-0. Comparison of Impacts After the Application of Mitigation Measures on Cultural Resources by Alternative ^a**

Chapter 19 – Cultural Resources	Alternative								
	1	2a	2b	2c	3	4a	4b	4c	5
Impact CUL-1: Impacts on Eligible Built-Environment Historical Resources	SU 10 resources	SU 13 resources	SU 8 resources	SU 10 resources	SU 6 resources	SU 9 resources	SU 4 resources	SU 6 resources	SU 6 resources
Resulting from Construction and Operation of the Project	LTS 16 resources	LTS 13 resources	LTS 17 resources	LTS 16 resources	LTS 13 resources	LTS 11 resources	LTS 14 resources	LTS 13 resources	LTS 11 resources
	NI 2 resources	NI 1 resource	NI 1 resource	NI 1 resource	NI 0 resources	NI 0 resources	NI 1 resource	NI 0 resources	NI 0 resources
Impact CUL-3: Impacts on Identified Archaeological Resources Resulting from the Project	SU 30 Archaeological Sites	SU 31 Archaeological Sites	SU 27 Archaeological Sites	SU 28 Archaeological Sites	SU 20 Archaeological Sites	SU 22 Archaeological Sites	SU 18 Archaeological Sites	SU 20 Archaeological Sites	SU 13 Archaeological Sites

2 NI = no impact; LTS = less than significant; SU = significant and unavoidable.

3 ^a Impacts in Table 19-0 include only those that are quantifiable based on current cultural resources data.

19.1 Environmental Setting

This section describes the study area for cultural resources, which includes a description of the environmental setting for cultural resources. The methods for identifying cultural resources are summarized in this section, and a summary of historical resources within the study area is provided.

19.1.1 Study Area

The study area for cultural resources (the area in which an environmental impact could occur) is defined as the 0.25-mile area buffer around the project footprint, which is the combined footprint of all project alternatives, that was studied as part of the records searches described in Section 19.1.2, *Methods for Resource Identification*. In addition to the study area, this chapter focuses on the area of impact for built-environment resources (AI-BE) and the area of impact for archaeological resources (AI-A).

The areas of impact encompass the areas directly or indirectly affected by field investigations along the tunnel alignment and the West Tracy Fault study, construction, and operation of the project, which is located in a largely rural area. To delineate the areas of impacts, the rural setting was taken into consideration, as well as the nature of proposed construction activities, such as temporary impacts, temporary and permanent support facilities, temporary transportation features, and direct visual or auditory impacts. Due to the two resource types for this chapter, the study area for cultural resources is divided into two separate areas: the AI-BE and the AI-A.

Under the CEQA, physical, visual, auditory, and vibrational impacts are considered potential direct impacts because these all have the potential to alter the resource or its immediate surroundings such that its historical significance would be impaired.

For this chapter, the following definitions are used:

- *Project footprint*: The project footprint comprises all project alternatives, including four main components: the central and eastern alignments, the Bethany Reservoir alignment, the three areas identified for compensatory mitigation (Interstate [I-] 5 Ponds 7 and 8, I-5 Pond 5, and Bouldin Island), and field investigations. The project footprint includes all project features for all project alternatives and was used as the basis for delineating the study area and the areas of impact.
- *The study area, or area of impact (AI)*: The combined areas of potential impact for the built environment and archaeology make up the cultural resources AI, or study area, for the project.
- *Area of impact for built-environment resources (AI-BE)*: The AI-BE is the area in which potential impacts on built-environment historical resources from field investigations, construction, operations, and maintenance of the project alternatives could occur (Appendix 19A, *Historical Resources Survey and Evaluation Report*, Appendix A, *Project Mapping*, Figures 1 through 3). The methodology for delineating the AI-BE is discussed below in Section 19.1.1.1, *Area of Potential Impact for Built-Environment Resources*.
- *Area of impact for archaeological resources (AI-A)*: The AI-A is the area in which potential impacts on archaeological resources from field investigations, construction, operations, and maintenance of the project alternatives could occur. The methodology for delineating the AI-A is discussed below in Section 19.1.1.2, *Area of Potential Impact for Archaeological Resources*.

1 **19.1.1.1 Area of Potential Impact for Built-Environment Resources**

2 The AI-BE was delineated to capture all potential direct and indirect impacts of the construction and
3 operation of all of the project alternatives on built-environment historical resources (Figure 19-1).

4 The project components in the AI-BE include above-grade project facilities including, but not limited to:
5 intake facilities, tunnel shafts, forebay, pumping plants, compensatory mitigation areas, power
6 and supervisory control and data acquisition (SCADA) lines, and transportation features. The AI-BE
7 excludes the length of the tunnels and other below-grade project features because the proposed
8 tunnels have no potential to impact built-environment resources.

9 Typically, the AI-BE extends one parcel out from proposed above-grade water conveyance features
10 to account for potential visual, atmospheric, or audible impacts. Where permanent proposed above-
11 grade water conveyance features are planned within a large parcel, and all project features would be
12 more than 1,000 feet from the next parcel boundary, only that parcel with the project feature is
13 included in the AI-BE. Where substantial linear features, such as waterways, roadways, or railroad
14 tracks separate project features from nearby built-environment resources, forming a logical
15 demarcation point that physically and visually separates the project features from resources, the AI-
16 BE does not include the full one-parcel extension from the project feature and ends at the linear
17 feature boundary.

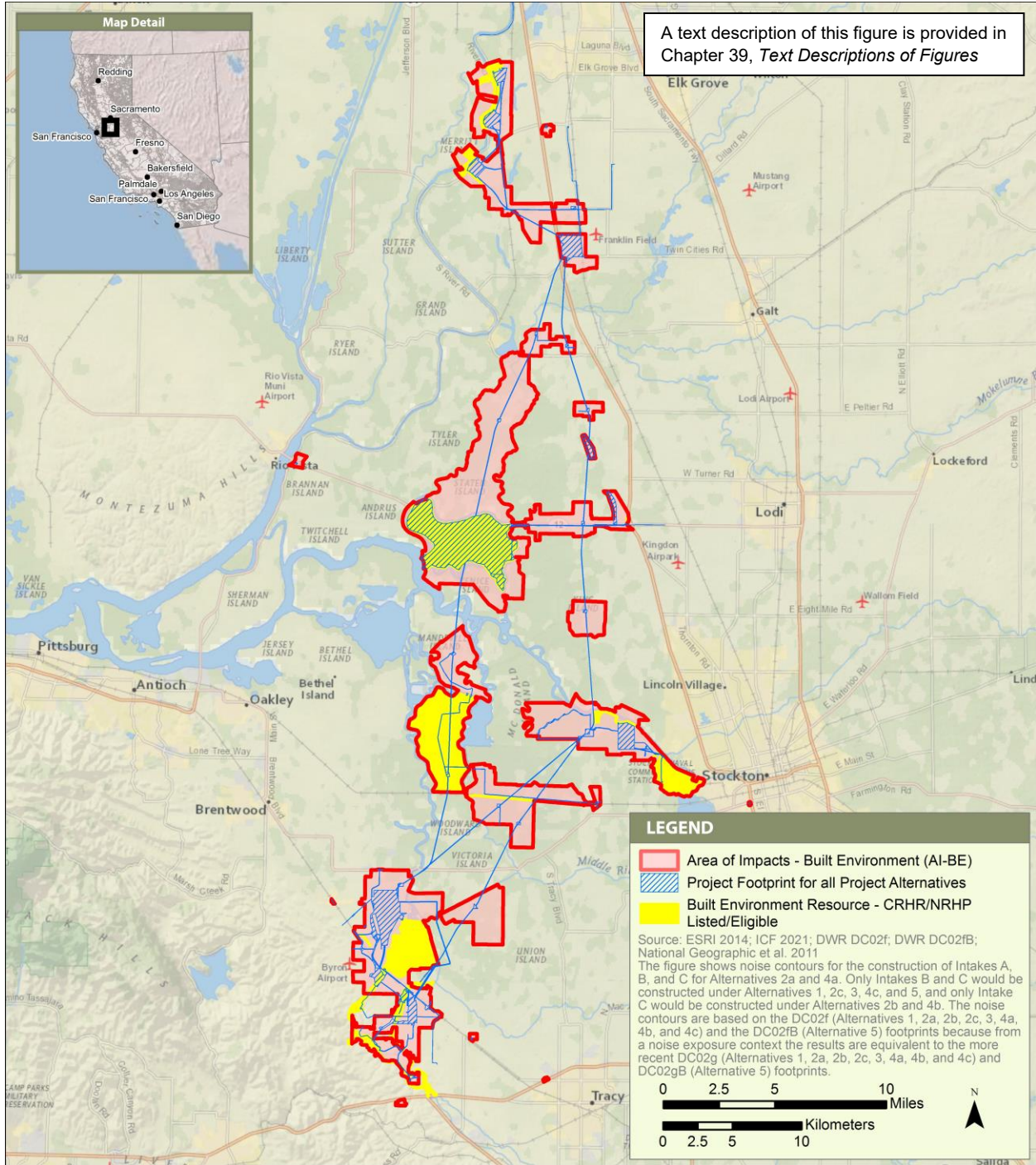
18 The footprint of temporary above-grade impacts is generally included in the AI-BE, except where the
19 temporary impacts would occur within existing roadways. In these areas, the roadway would be
20 restored to preconstruction conditions.

21 Proposed SCADA and power facilities located below grade within existing roadways are not included
22 in the AI-BE. Similar to temporary impacts within roadways, there would not be a potential to affect
23 these built-environment resources because of their location beneath the roadways.

24 Where roadway improvements affect a small segment of an existing roadway, the AI-BE is limited to
25 the area of permanent impact, even with narrow areas of permanent right-of-way takes from
26 adjacent parcels. Where existing transportation features are modified along the length of a property,
27 the entire parcel adjacent to those roadway improvements is generally included in the AI-BE. The
28 exception is where parcels are exceptionally large: then the AI-BE follows existing manmade and
29 natural features (like tree lines, crop lines, or farm lanes) that are at least 1,000 feet away from the
30 project features. Similarly, when parcels are very large and made of composite polygons, like an L
31 pattern or a series of rectangles, the AI-BE includes the topography and natural features that make
32 logical sense to create a buffer of at least 1,000 feet around project features, as this is a sufficient
33 distance to account for visual impacts within a large, flat landscape such as the Delta.

34 Where project features require modifications to existing berms or levees, the AI-BE includes a one-
35 parcel area around the project spanning the waterway. In compensatory mitigation areas, there is
36 no potential for visual impacts because the changes are at grade level and do not introduce new
37 types of features to the setting, so only the limits of disturbance were included in the AI-BE.

38 Field investigations, which could include geotechnical, hydrogeological, agronomic, and construction
39 test projects (geotechnical investigations), have no potential to affect built-environment historical
40 resources so these areas are not included in the AI-BE. The small-scale ground-disturbing activities
41 associated with field investigations are not expected to physically affect any buildings or structures.
42 Furthermore, the areas affected by small-scale ground-disturbing activities would be restored to
43 their pre-investigation conditions, with no potential for impacts.



1
 2 **Figure 19-1. AI-BE for the Delta Conveyance Project**

1 **19.1.1.2 Area of Potential Impact for Archaeological Resources**

2 The AI-A is the area of potential direct impacts from field investigations, construction, and
3 operations, and maintenance, that the combined footprint of all project alternatives and
4 compensatory mitigation areas could cause to archaeological resources (Figure 19-2). The AI-A was
5 delineated to capture all potential direct impacts of the construction and operation of the project on
6 archaeological resources. The AI-A is composed of above-grade project facilities including, but not
7 limited to: intake facilities, tunnel shafts, forebay, pumping plants, aqueducts, outlet and discharge
8 structures, compensatory mitigation areas, and transportation features such as road improvements
9 and park-and-ride lots. The tunnels themselves are not included in the AI-A because they would be
10 conducted at a depth that is below the level at which archaeological deposits have the potential to
11 occur, as explained in the geoarchaeological and buried site sensitivity analysis included in
12 Appendix 19B, *Archaeological Sensitivity Analysis Report (Confidential)*. Overall, the analysis reveals
13 that deeply buried landforms and surfaces with the potential to contain archaeological resources are
14 widespread across the study area and may extend to a depth of up to 68 feet below ground level in
15 some areas. However, field investigations are proposed along the tunnel alignments and therefore,
16 the alignments are included in the AI-A. The appendix is considered confidential in order to comply
17 with regulations regarding disclosure of sensitive information, as discussed in Section 19.2.1,
18 *Confidentiality Considerations*.

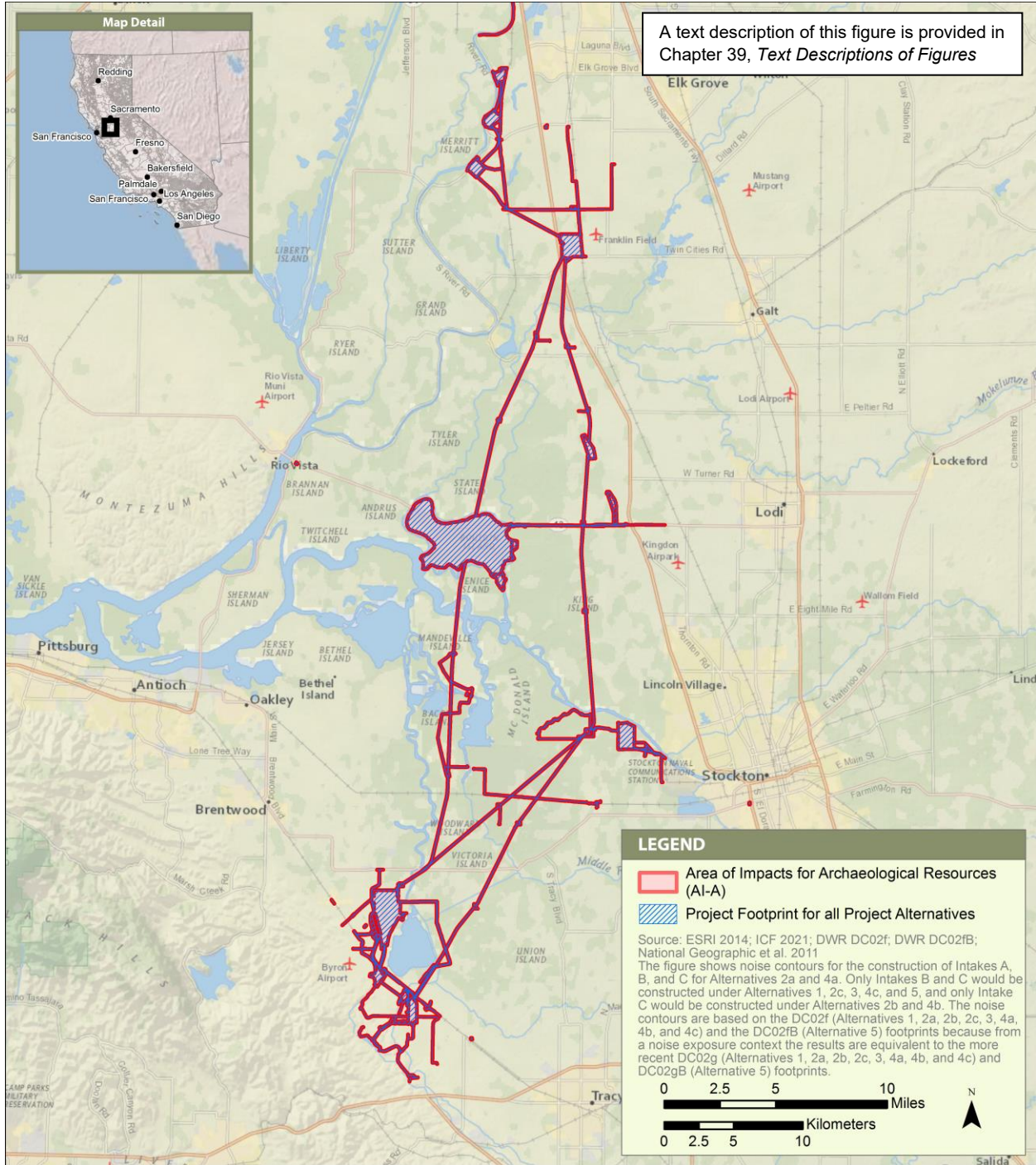


Figure 19-2. AI-A for the Delta Conveyance Project

19.1.2 Methods for Resource Identification

A number of standard methods that included record searches, desktop research, historical map research, archival research, and site visits were used to determine the types and location of known cultural resources that could be affected by project alternatives. A detailed description of the methods for resource identification are provided in Appendix 19A, *Historical Resources Survey and Evaluation Report*, and Appendix 19B, *Archaeological Sensitivity Analysis Report* (Confidential). The cultural resources that have been identified as eligible for or listed in the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR) are included in Sections 19.1.3.1, *Eligible Archaeological Resources*, and 19.1.4.1, *National Register of Historic Places: Buildings and Structures*.

For the purposes of this analysis, the following definitions were used:

- *Cultural resources*: built-environment resources and/or archaeological resources that were evaluated to determine if they are historical resources for the purpose of complying with CEQA.
- *Built-environment historical resource* or *historical resource*: built-environment resource that has been identified as eligible for listing in, or is listed in, the NRHP or CRHR for the purpose of complying with CEQA.
- *Archaeological resource*: Archaeological resource that has been previously identified or identified during the course of this project for the purpose of CEQA. For the purposes of the project, archaeological resources were broadly sorted into two categories:
 - Native American archaeological resources from prior to European contact, or before around AD 1500 (hereafter referred to as *early Native American resources*), and
 - Archaeological resources from after European contact (hereafter referred to as *post-contact archaeological resources*)
 - It is possible for an archaeological resource to also be a Tribal cultural resource (TCR) as defined in Public Resources Code Section 21074(a)(1) and (2); however TCRs are not always archaeological resources. TCRs are addressed in Chapter 32, *Tribal Cultural Resources*.
- *Integrity*: Integrity is the authenticity of a historical resource's physical characteristics so that it is recognizable as a historical resource and retains its ability to convey its historical associations or attributes. The evaluation of integrity is grounded in the evaluator's understanding of a property's physical features and how these features relate to its historical associations or attributes. Both the CRHR and NRHP define the following seven aspects of integrity.
 - Location: where the historic property was constructed or the place where the historic event occurred.
 - Design: the combination of elements that create the historic form, plan, space, structure, and style of a property. This includes organization of space, proportion, scale, technology, ornamentation, and materials. This is applicable to larger properties for the historic way in which the buildings, sites, and structures are related.
 - Setting: the physical environment of a historic property. It refers to the historic character of the property. It includes the historical relationship of the property to surrounding features

- 1 and open space. These include topographic features, vegetation, simple manmade paths or
2 fencing and the relationships between buildings, structures, or open space.
- 3 ○ Materials: the physical elements that were combined during a particular period of time and
4 in a particular pattern or configuration to form the historic property.
- 5 ○ Workmanship: the physical evidence of the crafts of a particular culture or people during a
6 given period in history. It may be expressed in vernacular methods of construction and plain
7 finishes or in highly sophisticated configuration and ornamental detailing.
- 8 ○ Feeling: the property's expression of the aesthetic or historic sense of a particular period of
9 time. It results from the presence of physical features that, taken together, convey the
10 property's historic character.
- 11 ○ Association: the direct link between an important historic event or person and a historic
12 property. A property retains association if it is the place where the event or activity
13 occurred and is sufficiently intact to convey that relationship to an observer. Like feeling,
14 association requires the presence of physical features that convey a property's historic
15 character.

16 19.1.3 Archaeological Resources

17 Appendix 19B, *Archaeological Sensitivity Analysis Report (Confidential)*, describes identified
18 archaeological resources located in the AI-A and the research conducted to identify areas of
19 archaeological sensitivity in the AI-A. The sensitivity analysis findings are summarized in the
20 following section.

21 The previously identified archaeological resources are summarized in Table 19-1.

22 **Table 19-1. Previously Identified Archaeological Resources**

P Number	Trinomial	Name	County	Age	Description	Eligibility Status
P-39-000031	N/A	N/A	San Joaquin	Post-Contact	Foundation	Not evaluated
P-39-000032	N/A	N/A	San Joaquin	Post-Contact	Refuse scatter	Not evaluated
P-39-000033	N/A	N/A	San Joaquin	Post-Contact	Foundation	Not evaluated
P-39-000034	N/A	N/A	San Joaquin	Post-Contact	Refuse scatter	Not evaluated
P-39-000035	N/A	N/A	San Joaquin	Post-Contact	Refuse scatter	Not evaluated
P-39-000036	N/A	N/A	San Joaquin	Post-Contact	Refuse scatter	Not evaluated
P-39-000037	N/A	N/A	San Joaquin	Post-Contact	Foundation	Not evaluated
P-39-000067	N/A	N/A	San Joaquin	Post-Contact	Refuse dump	Not evaluated
P-39-000068	N/A	N/A	San Joaquin	Post-Contact	Labor Camp	Not evaluated
P-39-000114	N/A	N/A	San Joaquin	Post-Contact	Labor Camp	Not evaluated
P-39-000200	N/A	N/A	San Joaquin	Early Native American	Seasonal occupation site	Not evaluated
P-39-000321	N/A	N/A	San Joaquin	Post-Contact	Refuse dump	Not evaluated
P-39-000322	N/A	N/A	San Joaquin	Post-Contact	Refuse dump	Not evaluated

P Number	Trinomial	Name	County	Age	Description	Eligibility Status
P-39-000323	CA-SJO- 209H	N/A	San Joaquin	Post-Contact	Labor Camp	1989, 2021: A/C (1989); D/4 (2021) associated with the Bacon Island Rural Historic District
P-39-000324	N/A	N/A	San Joaquin	Post-Contact	Foundation	Not evaluated
P-39-000330	N/A	N/A	San Joaquin	Post-Contact	Labor Camp	2021: D/4 associated with Bacon Island Rural Historic District
P-39-000334	N/A	N/A	San Joaquin	Post-Contact	Labor Camp	2021: D/4, associated with Bacon Island Rural Historic District
P-39-005179	N/A	N/A	San Joaquin	Post-Contact	Refuse scatter	Not evaluated
P-07-000085	CA-CCO-143	N/A	Contra Costa	Early Native American	Seasonal occupation site	Not evaluated
P-07-000086	CA-CCO-144	N/A	Contra Costa	Early Native American	No description	Not evaluated
P-07-000383	CA-CCO-618H	N/A	Contra Costa	Post-Contact	Refuse scatter	Not evaluated
P-07-000413	CA-CCO-653	N/A	Contra Costa	Early Native American	Mound Site	Not Evaluated
P-07-004512	CA-CCO-829	N/A	Contra Costa	Post-Contact	Foundation	Not evaluated
P-07-004516	N/A	N/A	Contra Costa	Post-Contact	Refuse scatter	Not evaluated
P-07-004519	N/A	N/A	Contra Costa	Post-Contact	Refuse scatter	Not evaluated
P-34-000048	CA-SAC-21	Hollister Mound	Sacramento	Early Native American	Mound Site	Not evaluated
P-34-000075	CA-SAC-48	Azevedo Mound	Sacramento	Early Native American	Mound Site	Not evaluated
P-34-000083	CA-SAC-56	Mosher Mound	Sacramento	Early Native American	Village Site	Not evaluated
P-34-000086	CA-SAC-59	Edinger Mound	Sacramento	Early Native American	Mound Site	Not evaluated
P-34-000087	CA-SAC-60	N/A	Sacramento	Early Native American	Mound Site	Not evaluated
P-34-000088	CA-SAC-61	N/A	Sacramento	Early Native American	Mound Site	Not evaluated
P-34-001497	CA-SAC-1092H	Walnut Grove Branch Line	Sacramento	Post-Contact	Railroad	Not evaluated
P-34-004288	N/A	N/A	Sacramento	Post-Contact	Sheet refuse	Not evaluated
P-34-005101	N/A	N/A	Sacramento	Post-Contact	Fence	Not evaluated

N/A = not applicable.

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1 **19.1.3.1 Eligible Archaeological Resources**

2 These resources were identified through record searches of the study area for previous studies and
3 resource evaluations on file at the various regional offices of the California Historical Resources
4 Information System (CHRIS). The CHRIS houses documentation of previously recorded cultural
5 resources and previously conducted cultural resource studies at regional information centers.
6 CHRIS information centers accessed for this study include the Northwest Information Center at
7 Sonoma State University, the Central California Information Center at California State University,
8 Stanislaus, and the North Central Information Center at California State University, Sacramento. Of
9 the 34 previously recorded archaeological resources identified, three have been evaluated for listing
10 on the CRHR or NRHP, including two that were evaluated as part of a historic district as discussed in
11 further detail in Appendix 19A. Site P-39-000323 was recommended as eligible for listing under
12 Criteria A and C. Sites P-39-000330 and P-39-000334 were evaluated as contributors to the Bacon
13 Island Historic District, which was recommended eligible for inclusion in the NRHP. These three
14 sites are described below. The other 31 previously recorded archaeological resources have not been
15 evaluated.

16 **P-39-000323**

17 This post-contact archaeological resource consists of the remnants of two boarding houses
18 associated with George Shima's Labor Camp 21, a concrete pad, and associated post-contact artifact
19 scatter. The resource was first recorded by Maniery and Cunningham of PAR Environmental
20 Services (Maniery and Syda 1989:44, 70-71). As of a 2019 site visit (Heffner and Prince-Buitenhuys
21 2019), both structures have been demolished and removed; however, a deteriorated concrete
22 foundation that most likely represents what remains of Building 1 was identified. The post-contact
23 artifact scatter appears to have been left in place but may have been disturbed by demolition
24 activity. The concrete pad was not relocated during the 2019 site visit. Maniery and Cunningham
25 recommended both buildings 1 and 2 as eligible for listing on the NRHP under Criteria A and C
26 (Cunningham and Maniery 1989). However, due to the demolition, these buildings would not be
27 eligible if reevaluated.

28 **P-39-000330**

29 This post-contact archaeological resource consists of George Shima's Labor Camp 8, a complex of
30 three structures including a boarding house, office, and warehouse. Four modern structures have
31 been constructed within the complex. No indication of an archaeological deposit is provided on the
32 resource record, but post-contact debris may exist below the ground surface in association with
33 these structures. Because this deposit is expansive it likely contains useful data, with integrity,
34 regarding historical patterns of consumption. The camp was established in 1915 to house
35 agricultural laborers. It was recorded by Maniery and Cunningham of PAR Environmental Services
36 and evaluated as a contributor to the Bacon Island Historic District, which was recommended
37 eligible for inclusion in the NRHP under Criteria D (Maniery and Syda 1989:35, 70-71).

38 **P-39-000334**

39 This post-contact archaeological resource consists of the standing remains and archaeological
40 deposit of Bacon Island Camp 11, an agricultural labor camp operated by George Shima. The records
41 on file include an archaeological resource record indicating a deposit 290 feet by 166 feet. In
42 addition to the standing buildings, archaeological debris consists of clear, aqua, and amber glass;

1 Japanese blue and white transferware porcelain; and white improved earthenware. Because this
2 deposit is expansive, it likely contains useful data, with integrity, regarding historical patterns of
3 consumption. The camp was established in 1915 to house agricultural laborers. It was recorded by
4 Maniery and Cunningham of PAR Environmental Services and evaluated as a contributor to the
5 Bacon Island Historic District, which was recommended eligible for inclusion in the NRHP under
6 Criteria D (Maniery and Syda 1989:36–37, 70–71).

7 **19.1.3.2 Buried Sites Analysis**

8 This subsection summarizes the project’s buried sites sensitivity findings. A geologic history of the
9 Delta region and details about the project’s geoarchaeological analysis are reported in Attachment B
10 of Appendix 19B, *Archaeological Sensitivity Analysis Report* (Confidential).

11 One of the main utilities of geoarchaeological investigation is identifying archaeological sites buried
12 by depositional processes, both natural and cultural. Because buried sites typically lack visible
13 features or artifacts indicating their presence to a field observer, they are often not identified during
14 surface survey (Bettis 1992). The ability to locate buried sites ultimately depends on several factors,
15 particularly the presence of depositional or stable landforms and/or appropriate soils.

16 The potential for buried archaeological deposits and archaeological sensitivity in the project
17 alternatives’ footprints was determined based on a review of the surface and subsurface geology of
18 the study area. Review of the available data revealed that the ground surface of much of the study
19 area is composed of Holocene-aged landforms. The most common depositional origin of these
20 landforms appears to be undifferentiated alluvium and tidal marshes. Tidal marshes are in the
21 center of the study area, while undifferentiated alluvium is in the northern, eastern, and southern
22 portions of the study area. Surface-exposed Pleistocene-aged, or near Pleistocene-aged, landforms
23 border the northeast, east, and southwest margins of the study area. Small surface-exposed outcrops
24 of Pleistocene-aged landforms are also sparsely distributed across the study area. Overall, this
25 review corroborated earlier studies, which indicated that that much of the study area generally has
26 sensitivity for containing buried Holocene-aged landforms and paleosols that may have potential for
27 containing deeply buried archaeological resources. This study further clarified that the southern-
28 and eastern-most portions of the study area—where Pleistocene-aged landforms are present at the
29 ground surface—have high sensitivity for archaeological resources on their surface but limited
30 sensitivity for containing deeply buried archaeological resources.

31 Overall, the analysis revealed that deeply buried landforms and surfaces with the potential to
32 contain archaeological resources are widespread across the study area and may extend to a depth of
33 up to 68 feet below mean sea level in some areas. For the purposes of this study, Holocene-aged
34 undifferentiated alluvium and the upper interface of Pleistocene-aged landforms have the greatest
35 potential to contain archaeological resources. Tidal marsh deposits were used by early Native
36 Americans but there is a low probability that archaeological deposits associated with this use would
37 have formed because the landforms would have been inaccessible for periods of each day as a result
38 of intertidal oscillation. Pleistocene-aged landforms—below their upper interfaces—have limited
39 potential to contain archaeological resources.

40 **19.1.3.3 Shipwrecks**

41 A literature review of CHRIS records search results, geographic information system (GIS) data, and
42 secondary sources on the possible locations of shipwrecks was conducted to identify the

1 archaeological sensitivity for post-contact maritime resources in the study area. The California State
 2 Lands Commission’s Shipwrecks Database (California State Lands Commission 2018) was consulted
 3 to determine whether historical shipwrecks may be present. The database was searched by plotting
 4 the coordinates using GIS and overlaying these with the study area. In addition, the following
 5 secondary sources were referenced for potential locations.

- 6 • A Map and Record Investigation of Historical Sites and Shipwrecks Along the Sacramento River
 7 Between Sacramento City and Sherman Island (California State Lands Commission 1988)
- 8 • The Clarksburg Shipwreck: A Gold Rush Ghost in the Sacramento River (Foster and Smith 2009)
- 9 • Shipwreck Blocks Corps Levee Repair in California (Plain 2011)

10 Several of these shipwrecks only had general locations, as provided with low resolution latitude and
 11 longitude coordinates with only two decimal places, or small-scale maps, as was the case with
 12 California State Lands Commission (1988) resources. In these instances, a buffer of 0.25 mile was
 13 placed on each identified shipwreck location to more accurately represent its potential location
 14 spatially.

15 Six shipwrecks were identified as potentially within the study area. Of these, four shipwrecks were
 16 in the AI-A or within 200 feet (Table 19-2). These resources are discussed in more detail below.

17 **Table 19-2. Shipwreck Research Results**

Shipwreck Name	Description	CRHR/NRHP Eligibility Status	Source
Clarksburg shipwreck	Circa 1840s–1850s deep-water sailing ship	Eligible under Criteria 1/A and 4/D	Foster and Smith 2009:258
American Eagle	Shipwreck	Unevaluated	California State Lands Commission 2018
Arrow	Shipwreck	Unevaluated	California State Lands Commission 2018
Valley Brew	Shipwreck	Unevaluated	California State Lands Commission 2018

18 CRHR = California Register of Historical Resources; NRHP = National Register of Historic Places.
 19

20 **Clarksburg Shipwreck**

21 This resource consists of the underwater remains of an unidentified wooden, copper-sheathed deep-
 22 water sailing ship found at a depth of 12 feet near the eastern bank of the Sacramento River. The
 23 construction date of the vessel was likely between the 1840s and 1850s based on the presence of
 24 metal fastenings, as well as the absence of metal knees or frames. The vessel is partially buried
 25 beneath riprap, but the port side is exposed and suggests a size of approximately 100 feet long by 25
 26 feet wide. Although the port side has been damaged by recent levee work, the vessel retains a great
 27 deal of integrity, and is the most complete Gold Rush-era sailing ship found in the Sacramento River
 28 to date (Foster and Smith 2009). This resource has been determined eligible for listing on the NRHP
 29 and CRHR.

1 **American Eagle, Arrow, and Valley Brew**

2 This resource consists of the underwater remains of three separate shipwrecks (American Eagle,
3 Arrow, and Valley Brew; California State Lands Commission 2018). No other information, including
4 how they were originally identified, is available and they have not been evaluated for listing on the
5 NRHP and CRHR.

6 **19.1.3.4 Unrecorded Archaeological Resources Analysis**

7 This subsection summarizes the analysis methods and findings for the project's unrecorded
8 archaeological resource sensitivity analysis. Detailed accounts of these efforts are provided in
9 Appendix 19B, *Archaeological Sensitivity Analysis Report* (Confidential).

10 The analysis to identify the project's unrecorded archaeological resource sensitivity included
11 historical map research, shipwreck research, ethnographic literature review, and Tribal
12 consultation. Historical map research looked at General Land Office and historical topographic maps
13 to identify early development features that could now be extant as archaeological resources, and
14 landscape features favorable to habitation, resource collection, or other uses by early Native
15 Americans that could contain unrecorded resources associated with these uses. Shipwreck research
16 examined a variety of map and secondary literature sources to identify if shipwrecks (either
17 suspected, or recorded in popular literature) are in close proximity to the project. The ethnographic
18 literature review examined and assessed natural resources (which can sometimes have an
19 archaeological component associated with resource gathering and processing) that were historically
20 found in the study area and associated them generally within the ancestral cultural boundary of a
21 Tribal group, as well as available literature on four cultural/language groups (the Nisenan Maidu,
22 the Southern Patwin, the Plains Miwok, and the Northern Valley Yokut) that was primarily collected
23 by ethnographers and anthropologists in the early to mid-1900s.

24 The results of the analysis of unrecorded archaeological resources conducted for the project
25 identified many areas that are sensitive for early Native American and post-contact resources.
26 Historical map research identified areas of heightened sensitivity for archaeological resources
27 concentrated in the north, along the center, and across the southern portions of the study area.
28 Shipwreck research identified four shipwrecks in close proximity, but not located within, the project
29 footprint. The ethnographic literature review yielded numerous locations with cultural value to
30 consulting Tribes that could be potential archaeological resources.

31 **19.1.3.5 Archaeological Sensitivity**

32 **Early Native American Resources**

33 Within the study area in general, deposits include Holocene fluvial and alluvial material derived
34 from surrounding slopes and major waterways. Both banks and terraces along natural river courses
35 (e.g., the Sacramento, San Joaquin, and Mokelumne Rivers) are considered likely settings for
36 encountering surface and subsurface traces of early Native American habitation and activities. By
37 applying models that are based in previous research in central California, it is recognized that buried
38 archaeological deposits are not distributed randomly throughout the landscape, but occur in specific
39 geoenvironmental settings. For example, fans and floodplains consistently contain buried
40 archaeological deposits, indicating some relationship between these landforms and past settlement
41 activities. Ideally, predictions about where buried archaeological resources are located would take

1 into account a number of characteristics related to the past distribution of important subsistence
2 resources (e.g., distance to water) and other environmental factors (e.g., aspect, ecotone, slope) that
3 may have made a specific location more favorable for occupation than another.

4 Collectively, the presence of numerous recorded early Native American resources, and the presence
5 of landforms that are sensitive for additional unidentified resources within the study area, suggests
6 that the project alternatives would, absent mitigation, disturb both additional resources that can be
7 identified through inventory, and buried resources that cannot be feasibly identified. Where human
8 activity formed archaeological resources on landforms that have now been buried, feasible surface
9 inventory and subsurface sampling through excavation may not reveal such resources.

10 Based on the broad patterns presented here, the highest potential for archaeological resources in
11 the study area occurs within Holocene alluvium in general and alluvial fans and terraces specifically.

12 **Post-Contact Resources**

13 Post-contact archaeological sensitivity is based on knowledge of the spatial organization of historic
14 properties, the types of activities that result in the deposition of objects that create archaeological
15 deposits, the presence of introduced vegetation such as fruit or palm trees, and identifying which
16 deposits typically have data potential to address relevant research questions. Archaeological
17 resources that are likely to have potential to contribute important archaeological information reflect
18 the activities, actions, and choices of the former residents or business owners, rather than a
19 standard or common design or material. Archaeological resources of this type typically do not
20 include the primary structures of the property (e.g., main residence, commercial, or industrial
21 building), but rather the adjacent activity areas, associated personalized outbuildings, or refuse
22 deposits. These areas, which have a higher likelihood to contain features and resources that have a
23 greater potential to contribute important archaeological information, include rear or side lots and
24 open spaces immediately adjacent to main structures and outbuildings, known or inferred activity
25 areas, and areas within building footprints.

26 Collectively, the presence of numerous recorded resources and a history of early development
27 across the study area suggests that the project alternatives could, absent mitigation, disturb
28 additional post-contact resources. Based on the broad patterns presented here, the highest potential
29 for post-contact archaeological resources in the study area exists where post-contact development
30 has occurred.

31 **19.1.4 Built-Environment Resources**

32 Appendix 19A, *Historical Resources Survey and Evaluation Report*, describes identified built-
33 environment historical resources located in the AI-BE and the results of this survey are summarized
34 in the following section. These resources were identified through record searches for previous
35 studies and resource evaluations on file at the various regional offices of the CHRIS, as well as
36 through technical studies that were conducted in support of the Delta Conveyance Project. Table 19-
37 3 summarizes the historical resources in the AI-BE.

38 Appendix 19C, *Impact Analysis of Project Alternatives on Built-Environment Historical Resources*,
39 identifies which resources are in the project footprints of each of the alternatives, and resources that
40 are unique to specific alternatives. For ease of reference to the technical study reports, unless
41 otherwise noted, all of the resources that are listed in or eligible for listing in the NRHP have also

1 been found to meet the criteria for listing in the CRHR. No CEQA-only historical resources (resources
2 not eligible for the CRHR but not the NRHP) were identified in the AI-BE.

3 **Table 19-3. Built-Environment Historical Resources**

Map ID	P Number	Name	Address/City	County	Description	Eligibility Status (Date, NRHP/CRHR Criteria)
3	-	9521 River Road	9521 River Road Sacramento	Sacramento	Vernacular Delta residence	2012: A/1, B/2
17	-	George Cornish House	53555 County Road 141 Clarksburg	Yolo	Italianate-style residence, Greek revival addition	1986 (resurveyed 2012, 2021): A/1, B/2, C/3
24	-	Delta Style House	37232 South River Road Clarksburg	Yolo	Vernacular Delta residence	1986; 2012: C/3
49	-	Delta-style residence, 37500 South River Road, Clarksburg	37500 South River Road Clarksburg	Yolo	Vernacular Delta residence	2012: C/3
68	34-002102	Rosebud Rancho	10255 River Road Hood	Sacramento	Italianate residence	1979: C/3
78	-	Foursquare, 38320 South River Road	38320 South River Road Clarksburg	Yolo	American Foursquare residence	2012, 2021:C/3
125	34-002143	Sacramento River Levee	N/A	Sacramento, Yolo	Levee	2017: A/1
128	-	Josiah Greene Residence, 39930 South River Road	39930 South River Road Clarksburg	Yolo	Vernacular Delta and Greek Revival residence	2012: A/1, B/2, C/3, D/4
142	-	Delta-style residence, 40478/40580 South River Road	40478/40580 South River Road Clarksburg	Yolo	Vernacular Delta residence	2012: C/3
147	-	George B. Greene House, 11275 River Road	11275 River Road Courtland	Sacramento	Greek Revival residence and agricultural buildings	2012: A/1, B/2, C/3
150	34-001496	Snodgrass Slough: slough and levee	N/A Courtland	Sacramento	Water conveyance component to CVP	C/3
168	-	3015 Point Pleasant Road	3015 Point Pleasant Road Elk Grove	Sacramento	Craftsman residence	2021: C/3
275	-	B&W Resort Marina	964 Brannon Island Road Isleton	Sacramento	Delta marina	2021: A/1

Map ID	P Number	Name	Address/City	County	Description	Eligibility Status (Date, NRHP/CRHR Criteria)
281	39-004541	Mokelumne River Swing Truss Bridge 29-0043	N/A	Sacramento, San Joaquin	Bridge	2012: A/1 and C/3
318	39-004916	Old Terminous School	15007 Glasscock Road Lodi	San Joaquin	School building, residence	2021: C/3 and D/4
332	-	WAPA 230kV Elverta-Tracy Transmission Line	N/A	-	Transmission Line	2021: A/1
342	39-000501	Tower Park Culling Chute—Demolished	14900 West Highway 12 Lodi	San Joaquin	Demolished three-story, wood-framed culling chute	Demolished, previously listed in NRHP (1983)
359	-	Bouldin Island Rural Cultural Landscape District	-	San Joaquin	Agricultural Delta island	2021: A/1, D/4
451	39-004399	Mokelumne Aqueduct	N/A	Calaveras, Contra Costa, San Joaquin	Water conveyance feature	2003, 2021: A/1, B/2, and C/3
452	-	Bacon Island Road South Bridge	N/A	-	Movable swing bridge	2003, 2012: A/1, C/3
481	-	Feeder Barn, 8700 Neugebauer Road	8700 Neugebauer Road	San Joaquin	Wooden feeder barn	2012: C/1
539	-	Bacon Island Rural Historic District	N/A	San Joaquin	Agricultural island	1993, 2012: A/1, B/2, C/3, D/4
541	39-005166	Stockton Deep Water Channel Levee	N/A Stockton	San Joaquin	Deep water channel/levee	2021: A/1
559	39-000327	Bacon Island Camp 3	20 South Bacon Island Road Stockton	San Joaquin	Partially demolished agricultural and residential buildings	2021: D/4, as a contributor to Bacon Island Rural Historic District
565	39-000326	Bacon Island Camp 2	20020 S. Bacon Island Road Stockton	San Joaquin	Agricultural and residential buildings	1993, 2021: A/1, B/2, C/3, D/4, as a contributor to Bacon Island Rural Historic District
588	39-004576	U. S. Naval Communication Station Stockton	Naval Communication Station Stockton	San Joaquin	Industrial/Commercial warehouses and infrastructure	1995, 2021: A/1 and C/3
634	39-000336	Bacon Island Camp 12	2275 Bacon Island Road Stockton	San Joaquin	Agricultural and residential buildings	1993, 2021: A/1, B/2, C/3, D/4, as a contributor to Bacon Island Rural Historic District

Map ID	P Number	Name	Address/City	County	Description	Eligibility Status (Date, NRHP/CRHR Criteria)
721	-	Byron Community Library Club	3926 Main Street Byron	Contra Costa	Commercial building	2021: C/3
748	-	PG&E Vaca-Tesla 500kV Transmission Line	N/A	Contra Costa	Transmission Line	2021: A/1
765	07-004698	Delta Field Division of the California SWP	N/A	Contra Costa	Water storage and conveyance components of the SWP	2021: A/1 and C/3
880	01-010435	Segment of the Delta-Mendota Canal and Intake Channel	N/A	Alameda, Contra Costa	Water conveyance component to CVP	2021: A/1, C/3. Also as a contributor to a potential Central Valley Project (CVP) historic district under A/1 and C/3

CRHR = California Register of Historical Resources; CVP = Central Valley Project; N/A = not applicable; NRHP = National Register of Historic Places; PG&E = Pacific Gas & Electric Company; SWP = State Water Project.

19.1.4.1 National Register of Historic Places: Buildings and Structures

Sacramento County

Rosebud Rancho (Map ID 068)

The property is the Rosebud Rancho at 10255 River Road, Clarksburg, in Sacramento County. This property was listed in the NRHP in 1979 under Criterion C, for its Italianate architecture and for the work of a master architect, Nathaniel Goodell, constructed circa 1877. The property suffered from a fire in November 1989 that destroyed the entire house except for the façade, as well as the water tower, smokehouse, and garages (ICF 2012:59). The rear of the house was reconstructed and the front façade was restored to match its previous appearance. The property was field checked (ICF 2012:59) which showed damage to and loss of contributing buildings. The field check performed in 2020, however, shows that the property was restored in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

George B. Greene House (Map ID 147)

The property is the George B. Greene House at 11275 River Road, Courtland, in Sacramento County. This large agricultural property includes a large Greek Revival residence constructed in 1876, orchards, multiple sheds, and a large packing complex. The Greene family, whose descendants still live in the house, was one of the most prolific agriculture producers in the region and the fruit production is still in operation as a family business. The first Greene, Josiah, reportedly built the first levee in California and grazed dairy cattle on the reclaimed land, making it the first commercial dairy in California in 1866. The property was evaluated (ICF 2012:79) and found eligible at the local level of significance under NRHP/CRHR Criteria A/1, B/2, and C/3 for its association with the early development of Delta agriculture, the Greene family, and for regional Greek Revival architecture.

1 Snodgrass Slough (Map ID 150)

2 Snodgrass Slough conveys water from the Sacramento River to the Delta Cross Channel. The
3 resource is significant under NRHP/CRHR Criteria C/3 as a component of the Central Valley Project
4 (CVP). The features that define its character and convey its significance are its location, its rural and
5 agricultural setting, its earthen levee and channel structure, and its continued ability to convey
6 water as part of the CVP's main water management systems. Its period of significance is 1920–1951,
7 and the historic property boundary is the 1.48-mile segment in the AI-BE extending from the
8 Sacramento River east and south toward Lambert Road.

9 3015 Point Pleasant Road (Map ID 168)

10 The Craftsman-style residence is related to the sporadic rural residential development of the
11 northeastern Delta, likely because of its proximity of the Southern Pacific Railroad to the east. The
12 resource is significant under NRHP/CRHR Criteria C/3 as a rural Craftsman bungalow and a rare
13 resource type in this section of the Delta. The character-defining features of the resource include its
14 massing, along with the cladding, window placement, front door, roof form, and front porch. Its
15 period of significance is 1925, and the historic property boundary is limited to the footprint of the
16 residence (Appendix 19A, under the *Findings for Individual Resources and Districts* section, *3015*
17 *Point Pleasant Road (Map ID 168)* subsection).

18 B&W Resort Marina (Map ID 275)

19 B&W Resort Marina is a Delta riverfront resort with covered berths along the levee, riverfront
20 lodging, a restaurant, fuel and pump out facilities, boat repair and storage, and additional lodging
21 inside the Andrus Island perimeter levee. The property is characteristic of Delta marinas established
22 in the early twentieth century and developed in the 1950s and 1960s as camp-style resorts. The
23 resort, including the riverfront berths and resort buildings, is associated with the Delta's historically
24 significant river-based recreational development and has significance under NRHP/CRHR Criteria
25 A/1. Its period of significance is 1938–1965, and the historic property boundary is the Assessor's
26 parcel boundary. The features that define its character and convey its significance are its docks and
27 covered berths, its waterfront lodge buildings, the roadway along the crest of the levee between the
28 lodge and the marina, the lodge office building, and the relationship of these elements. The setting
29 and viewscape are integral to the property's location, setting, and feeling, and include its riverfront
30 setting adjacent to Staten and Bouldin Islands (Appendix 19A, under the *Findings for Individual*
31 *Resources and Districts* section, *B&W Resort Marina (Map ID 275)* subsection).

32 San Joaquin County**33 Old Terminous School (Map ID 318)**

34 The property is the Old Terminous School at 15007 Glasscock Road at San Joaquin County assessor
35 parcel number 025030070000. A 1991 report by the San Joaquin County Superintendent of Schools
36 documented this building (which is now a residence) and recommended the building eligible for the
37 NRHP but did not apply NRHP/CRHR criteria. As part of the *Historical Resources Survey and*
38 *Evaluation Report* (Appendix 19A), the property was evaluated using the NRHP/CRHR criteria
39 (Appendix 19A, under the *Findings for Individual Resources and Districts* section, *Old Terminous*
40 *School (Map ID 318)* subsection) and found eligible at the local level of significance under Criteria
41 C/3 for embodying the distinctive characteristics of the type, period, and methods of construction of
42 civic architecture, and D/4 for its data potential.

1 Tower Park Culling Chute (Map ID 342)

2 This structure is no longer extant. The former structure was a three-story, wood-framed chute
3 located on the Terminous wharf and designed to drop crop cullings from adjacent packing sheds
4 into barges on Little Potato Slough. The structure was built circa 1927, listed in the NRHP in 1983,
5 and demolished at an unknown date. Although this resource is demolished, it remains formally
6 listed in the NRHP until it is delisted. The location is now part of the Tower Park Resort property, an
7 NRHP/CRHR ineligible resource.

8 Bacon Island Camp 2 (Map ID 265)

9 Although not accessible during fieldwork, based on an assessment of historical and current aerial
10 photos, and the past evaluations, Bacon Island Camp 2, at San Joaquin County APN 12905019, is
11 both a contributor to the Bacon Island Rural Historic District and individually eligible under
12 Criterion A/1 as a representative example of reclamation and agricultural endeavors relating to
13 Japanese Americans between 1913 and 1942; Criterion B/2 because it was used by and associated
14 with George Shima, a pivotal figure in Japanese American history; Criterion C/3 because it is an
15 example of a type of landscape (seen in the spatial organization of features and camps) and
16 architectural style not seen in the Delta today; and Criterion D/4 because it contains archaeological
17 materials, particularly Japanese manufactured items, with comparative value.

18 Bacon Island Camp 3 (Map ID 559)

19 Although not accessible during fieldwork, based on an assessment of historical and current aerial
20 photos, and the past evaluations, the now-partially-demolished Bacon Island Camp 3, at San Joaquin
21 County APN 12905060, is both a contributor to the Bacon Island Rural Historic District and is
22 individually eligible under Criterion A/1 as a representative example of reclamation and agricultural
23 endeavors relating to Japanese Americans between 1913 and 1942; Criterion B/2 because it was
24 used by and associated with George Shima, a pivotal figure in Japanese American history; Criterion
25 C/3 because it is an example of a type of landscape (seen in the spatial organization of features and
26 camps) and architectural style not seen in the Delta today; and Criterion D/4 because it contains
27 archaeological materials, particularly Japanese manufactured items, with comparative value.
28 Additionally, Camp 3 may also have served as George Shima's Delta operations headquarters from
29 1918 through the 1930s.

30 Bacon Island Camp 12 (Map ID 634)

31 Although not accessible during fieldwork, based on an assessment of historical and current aerial
32 photos and the past evaluations, Bacon Island Camp 12, located at APN 12905014, is both a
33 contributor to the Bacon Island Rural Historic District and is individually eligible under Criterion
34 A/1 as a representative example of reclamation and agricultural endeavors relating to Japanese
35 Americans between 1913 and 1942; Criterion B/2 as it was used by and associated with George
36 Shima, a pivotal figure in Japanese American history; Criterion C/3 as it is an example of a type of
37 landscape (seen in the spatial organization of features and camps) and architectural style not seen in
38 the Delta today; and Criterion D/4 as it contains archaeological materials, particularly Japanese
39 manufactured items, with comparative value.

1 **Bacon Island Road South Bridge (Map ID 452)**

2 Bacon Island Road South Bridge is a highway bridge in San Joaquin County. This movable swing
3 bridge constructed in 1905 is a virtual twin to the Old River Bridge that was found eligible for the
4 NRHP by Caltrans in 2003. The Bacon Island Road South Bridge was evaluated and found eligible
5 under NRHP/CRHR Criteria A/1 for its association with the development of the navigable waterway
6 and road transportation systems in the Delta, and at the local level of significance under
7 NRHP/CRHR Criteria C/3 as an example of a Pratt truss bridge design (ICF 2012:81).

8 **8700 Neugebauer Road (Map ID 481)**

9 The property is at 8700 Neugebauer Road, Stockton, in San Joaquin County. This circa 1900 feeder
10 barn was evaluated (ICF 2012:83) and found eligible at the local level of significance under
11 NRHP/CRHR Criteria C/1 as an example of an early western feeder barn. The barn embodies the
12 distinctive characteristics of this type, with its rectangular plan, gable doors, and low-pitched roof,
13 and is an ornate version of this style, with a stacked gable, decorative brackets, and Dutch doors.

14 **Stockton Deep Water Channel Levee (Map ID 541)**

15 The Stockton Deep Water Channel Levee in San Joaquin County is the western shore forming the
16 Stockton Deep Water Channel northwest of Stockton. J. Lang and B. Cox recorded the Stockton Deep
17 Water Channel Levee in 2009 (P-39-005166). The Stockton Deep Water Channel Levee, dating to
18 1930–1933, is recommended eligible for the NRHP/CRHR under Criteria A/1 for its association with
19 economic and community development of Stockton and as a key contributor to regional
20 transportation development (Appendix 19A, under the *Findings for Individual Resources and*
21 *Districts* section, *Stockton Deep Water Ship Channel Levee (Map ID 541)* subsection).

22 **Contra Costa County**

23 **Byron Community Library Club (Map ID 721)**

24 The County Library in Byron is at 3926 Main Street, Byron, in Contra Costa County. It is a 1925
25 commercial building eligible at the local level of significance under NRHP/CRHR Criteria C/3. The
26 building is a locally rare example of early twentieth century commercial architecture embodying the
27 distinctive characteristics of the type, period, and methods of construction (Appendix 19A, under
28 the *Findings for Individual Resources and Districts* section, *Byron Community Library Club (Map ID*
29 *721)* subsection).

30 **PG&E Vaca-Tesla 500kV Transmission Line (Map ID 748)**

31 The Pacific Gas and Electric Company (PG&E) 500kV Vaca-Tesla Transmission Line is a 57-mile
32 single-circuit, three-phase high voltage transmission line built from 1967–1969. It is eligible for the
33 NRHP/CRHR under Criteria A/1 for its association with the development of the Pacific Intertie and
34 for embodying thematic innovations in extra-high voltage electrical transmission (Appendix 19A,
35 under the *Findings for Individual Resources and Districts* section, *Pacific Gas and Electric Company*
36 *Vaca-Tesla 500-kV Transmission Line (Map ID 748)* subsection).

1 **Yolo County**

2 **9521 River Road (Map ID 003)**

3 The property is at 9521 River Road, Clarksburg, in Yolo County. This circa 1903 vernacular
4 residence with Queen Anne elements is part of a property that was significantly expanded and
5 planted during the early years of large-scale agricultural development in the Delta. Additionally, it is
6 associated with Catherine Mosher who, as a young widow and mother of seven, operated and
7 expanded the ranch and established a successful seed business. The property was evaluated (ICF
8 2012:76) and found eligible at the local level of significance under NRHP/CRHR Criteria A/1 and
9 B/2.

10 **George Cornish House (Map ID 017)**

11 The property is the George Cornish House at 53555 County Road 141, Clarksburg, in Yolo County.
12 This property was initially built in 1880 and evaluated in 1986 by Les Thomas Associates. The
13 property was field checked (ICF 2012:63; Appendix 19A, under the *Findings for Individual Resources*
14 *and Districts* section, *George Cornish House (Map ID 017)* subsection) and found to be unaltered. The
15 property is eligible at the local level of significance under NRHP/CRHR Criteria A/1 for its
16 association with the early reclamation and agricultural development of Clarksburg. The property is
17 eligible at the local level of significance under NRHP/CRHR Criteria B/2 for its association with
18 George Cornish, an early Delta pioneer and developer in the Delta. In addition, this Italianate-style
19 residence built in 1880 with its Greek Revival-style portico addition (1915) embodies the
20 distinctive characteristics of both these styles and is eligible at the local level of significance under
21 NRHP/CRHR Criteria C/3. The initial construction and the addition both fall within the 1880–1915
22 period of significance as an early twentieth century farm estate.

23 **37232 South River Road (Map ID 024)**

24 The property is at 37232 South River Road, Clarksburg, in Yolo County. This Delta vernacular
25 residence, constructed in 1925, was previously evaluated in 1986 as part of the 15-property Lisbon
26 District, a series of vernacular buildings associated with early Portuguese settlers. The property was
27 reevaluated in 2012 and found eligible at the local level of significance under NRHP/CRHR Criteria
28 C/3 for its distinct regional architecture (ICF 2012:63).

29 **37500 South River Road (Map ID 049)**

30 The property is at 37500 South River Road, Clarksburg, in Yolo County. This 1919-constructed Delta
31 vernacular style house with Folk Victorian elements features a second story, the primary living
32 space, extending above the height of the river as a precaution against flooding. The property was
33 evaluated in (ICF 2012:76) and found eligible at the local level of significance under NRHP/CRHR
34 Criteria C/3 for its embodiment of the distinctive features of this style, period, and method of
35 construction.

36 **38320 South River Road (Map ID 078)**

37 The property is at 38320 South River Road, Clarksburg, in Yolo County. This circa 1900 American
38 Foursquare house was evaluated (ICF 2012:77) and found eligible at the local level of significance
39 under NRHP/CRHR Criteria C/3 for embodying the distinctive characteristics of its type, period, and
40 method of construction as an American Foursquare house. Although the property had undergone
41 some alterations to the porch, including the replacement of the Tuscan order columns, the property

1 was found to retain sufficient integrity to convey its significance (Appendix 19A, under the *Findings*
2 *for Individual Resources and Districts* section, 38320 South River Road (Map ID 078) subsection).

3 **40478 & 40580 South River Road (Map ID 142)**

4 The property is at 40478 & 40580 South River Road, Clarksburg, Yolo County. This large circa 1900-
5 constructed Delta vernacular style house features a second story, the primary living space,
6 extending above the height of the river as a precaution against flooding. The property was evaluated
7 (ICF 2012:84) and found eligible at the local level of significance under NRHP/CRHR Criteria C/3 for
8 its embodiment of the distinctive features of its style, period, and method of construction.

9 **Josiah Greene Residence, 39930 South River Road (Map ID 128)**

10 The Josiah Greene Residence is at 39930 South River Road, Clarksburg, Yolo County. This 1861-
11 constructed residence was found eligible (Appendix 19A, under the *Findings for Individual Resources*
12 *and Districts* section, *Josiah Greene Residence, 39930 South River Road (Map ID 128)* subsection) at
13 the state level of significance under NRHP/CRHR Criteria A/1 for its association with Delta
14 Reclamation; B/2 as Josiah Greene's residence and farmland, where he initially began reclamation
15 efforts; C/3 for its distinct regional architecture and for embodying the distinctive characteristics of
16 the type, period, and methods of construction for a Delta adaptation of the Greek Revival style; and
17 D/4 for its data potential.

18 **19.1.4.2 National Register of Historic Places: Districts and Landscapes**

19 **Multi-County**

20 **Central Valley Project**

21 The CVP consists of a system of dams, power plants, canals, pumping plants, and associated
22 structures, that are used in conjunction with natural water bodies such as rivers, to convey water for
23 beneficial uses and to reduce flood risk. The constituent property types within this system of
24 features have both significance and integrity under the first three NRHP/CRHR criteria for their
25 association with important events, designers, and feats of engineering (Bureau of Reclamation
26 2018:65-79, 105-109)). While individual property types may not be significant under each
27 criterion, the system as a whole has significance for its association with events such as agriculture
28 and reclamation (A/1), significant people who designed the system (B/2), and distinctive feats of
29 engineering (C/3). The constituent property types and relevant aspects of significance and integrity
30 are described in detail in the NRHP nomination forms (Bureau of Reclamation 2018:65-79, 105-
31 109).

32 **Delta-Mendota Water Conveyance System of the Central Valley Project (Map ID 880)**

33 The Delta-Mendota Water Conveyance System of the CVP is in Contra Costa, Alameda, and San
34 Joaquin Counties. Components of this resource have previously been recommended eligible for the
35 NRHP and CRHR as under Criteria A/1 and C/3 (Appendix 19A, *Historical Resources Survey and*
36 *Evaluation Report*, under the *Findings for Individual Resources and Districts* section, *Delta Water*
37 *Conveyance System of the Central Valley Project (Map ID 880)* subsection). Eligible resources,
38 including the Delta-Mendota Canal, have also been considered potentially eligible as contributors to
39 a NRHP/CRHR-eligible CVP historic district. The current evaluation consolidates previous records
40 and includes elements not previously identified. It concludes that the resources comprise an NRHP

1 and CRHR Delta-Mendota Water Conveyance System historic district eligible under Criteria A/1 and
2 C/3, and that it is eligible as a contributor to a potential CVP district under the same criteria
3 (Appendix 19A, under the *Findings for Individual Resources and Districts* section, *Delta Water*
4 *Conveyance System of the Central Valley Project (Map ID 880)* subsection).

5 **California State Water Project, Delta Field Division, Affected Properties (Map ID 765)**

6 The California State Water Project (SWP) conveys and stores water between Shasta Dam and the
7 Delta Field Division structures near Tracy. Delta Field Division elements include the Clifton Court
8 Forebay (intake channel and forebay, and levees), John F. Skinner (Skinner) Delta Fish Facility, the
9 Harvey O. Banks (Banks) Pumping Plant (plant, intake channel, and administrative building),
10 Bethany Reservoir, and the California Aqueduct.

11 The Clifton Court Forebay intake channel connects the Clifton Court Forebay with the West Canal
12 cutoff of the Old River to the east. The Clifton Court Forebay is a large reservoir that holds a
13 maximum of approximately 28,600 acre-feet of water. A paved road runs atop the levees
14 surrounding the irregularly shaped forebay. At its western side, opposite its intake channel, an
15 outlet channel funnels water through the Skinner Delta Fish Facility to the southwest.

16 Skinner Delta Fish Facility flanks the channel and separates the Clifton Court Forebay portion of the
17 system to the north and northwest from the Pumping Plant portion of the system to the south and
18 southeast. A trash boom and a protective fish barrier cross the channel. Five buildings support fish
19 protection operations to the west while eight buildings support operations to the east.

20 Banks Pumping Plant intake channel is the initial portion of the California Aqueduct and extends
21 approximately 2.15 miles between the Skinner Delta Fish Facility to the northeast and the pumping
22 plant to the southwest. Just south of the fish facility, two bridges cross over the channel: the Byron
23 Highway and the Southern Pacific Railroad.

24 Banks Pumping Plant intake channel terminates at the pumping plant. The pumping plant pumps
25 water uphill into Bethany Reservoir and the California Aqueduct. The concrete pumping plant is
26 approximately 25 feet above the plant's intake channel. The system carries water 244 vertical feet
27 into the California Aqueduct. An administrative area is located to the east of the pumping plant. It
28 includes numerous buildings, a surface parking lot, and grass lawns.

29 From the Banks Pumping Plant, the California Aqueduct runs underground for approximately 1,200
30 feet before resurfacing and flowing into Bethany Reservoir. Bethany Reservoir is a long, narrow, and
31 irregularly shaped reservoir. The aqueduct extends to the southeast from the Bethany Reservoir.

32 Collectively these Delta Field Division facilities appear to be eligible under NRHP Criteria A and C
33 because of the important role they play as part of an expansive, engineered water conveyance
34 system, which was designed to store and divert water in Northern California and distribute it to
35 urban and agricultural areas in the state, both individually and as contributors to a potential SWP
36 historic district. For these same reasons this set of properties are likely eligible under CRHR Criteria
37 1 and 3 (Appendix 19A, under the *Findings for Individual Resources and Districts* section, *Delta Field*
38 *Division of the State Water Project (Map ID 765)* subsection).

39 **Sacramento River Levee (Map ID 125)**

40 The property is the Sacramento River Levee on the eastern bank of the Sacramento River
41 throughout Sacramento County. Margaret Mitchell of the California Department of Water Resources

1 (DWR) evaluated the resource as the “United States Army Corps of Engineers (USACE) River Flood
2 Control Project Levee—Unit 115,” in 2017 (P-34-002143). The Sacramento River Levee, dating from
3 1937–1953, is eligible for the NRHP/CRHR under Criteria A/1 as a contributing element to the
4 Sacramento River Flood Control Project, which reflects a significant event important to the themes
5 of agricultural and urban growth in California’s Central Valley.

6 **Mokelumne River Swing Truss Bridge, Bridge No. 29-0043 (Map ID 281)**

7 Part of State Route 12, the Mokelumne River Swing Truss Bridge (Caltrans Bridge No. 29-0043)
8 spans the north fork of the Mokelumne River, connecting Sacramento and San Joaquin Counties.
9 Constructed in 1942 by Minneapolis Steel and Machinery, the bridge is one of the largest in the Delta
10 system, totaling 1,436.1 feet in length. The bridge is eligible for listing in the NRHP/CRHR under
11 Criteria A/1 and C/3 (Appendix 19A, under the *Findings for Individual Resources and Districts*
12 section, *Mokelumne River Swing Truss Bridge, Bridge No. 29-0043 (Map ID 281)* subsection).

13 **Mokelumne Aqueduct (Map ID 451)**

14 The Mokelumne Aqueduct, in Sacramento and San Joaquin Counties, is a water conveyance feature
15 bringing water from the Pardee Dam to the San Leandro Reservoir. The property is eligible for the
16 NRHP/CRHR under Criteria A/1 and C/3 for its association with twentieth century development of
17 Bay Area municipal water systems and as a reflection of the work by Arthur Powell Davis, a master
18 civil engineer (Dexter and Lemon 2003; see Appendix 19A).

19 **San Joaquin County**

20 **WAPA 230kV Elverta-Tracy Transmission Line (Map ID 332)**

21 The Western Area Power Administration (WAPA) 230kV Elverta-Tracy Transmission Line is a 72-
22 mile transmission line built circa 1950. It is recommended eligible for the NRHP/CRHR under
23 Criteria A/1 for its important association with the CVP, a federal-overseen water management and
24 power generation program significant to California history. This line carries Shasta Dam generated
25 power to the Tracy Pumping Plant (now called the C. W. Bill Jones Pumping Plant), a component of
26 the Delta-Mendota Water Conveyance System of the CVP, an NRHP-eligible resource (Appendix 19A,
27 under the *Findings for Individual Resources and Districts* section, *Western Area Power Administration*
28 *230-kV Elverta-Tracy Transmission Line (Map ID 332)* subsection).

29 **Bouldin Island Rural Cultural Landscape District (Map ID 359)**

30 After completing a reconnaissance survey and intensive level survey, two islands fell completely
31 within the study area as defined for the project: Bouldin Island and Staten Island. After a landscape
32 analysis of both islands, it was determined that Bouldin Island rises to the level of significance in
33 association with important reclamation events and trends, and it is a strong representation of
34 historically significant agriculture, reclamation, and social history themes in the region. As part of
35 the *Historical Resources Survey and Evaluation Report* prepared for this project (Appendix 19A),
36 DWR recommended that the Bouldin Island Rural Historic Landscape is eligible for the NRHP/CRHR
37 under Criteria A/1 for its association with the Delta’s reclamation and farming practices, which are
38 historically significant at the national level. The landscape is also recommended eligible under
39 Criteria D/4 for its archaeological resource types, which have the potential to test the veracity of,
40 and provide new information about, the current historic record for the Delta’s agricultural heritage
41 and in particular the people and cultures who are part of that heritage. The property’s period of

1 significance is 1910 to 1940, the era when the Delta's reclamation and wetlands farming practices
2 matured from their nineteenth-century origins (Appendix 19A, under the *Findings for Rural Historic*
3 *Landscape Districts* section, *Bouldin Island Rural Historic Landscape (Map ID 359)* subsection).

4 The property's character-defining features are those landscape features that retain historical
5 integrity by continuing today to reflect processes and elements that were present during the period
6 of significance. The elements that contribute to the rural historic district's significance are the
7 landscape components and processes described in this evaluation that embody and reflect the
8 associations and retain integrity of these associations (Appendix 19A, Appendix E, *Bouldin Island*
9 *Rural Historic Landscape District*).

10 **Bacon Island Rural Historic District (Map ID 539)**

11 Bacon Island in its entirety was evaluated (PAR Environmental Services 1993:81-93) as a potential
12 Rural Historic District under all four NRHP criteria. The property was field checked in 2012; access
13 to the property was limited (ICF 2012:74). Significance under NRHP/CRHR Criteria A/1 is related to
14 Bacon Island's associations as a representative example of reclamation and agricultural endeavors
15 relating to Japanese Americans between 1913 and 1942. Significance under NRHP/CRHR Criteria
16 B/2 is tied to the island's use and association with George Shima, a pivotal figure in Japanese
17 American history. Significance under NRHP/CRHR Criterion C/3 is as an example of a type of
18 landscape (seen in spatial organization of features and camps) and architectural style not seen in the
19 Delta today. Significance under NRHP/CRHR Criteria D/4 is tied to the island's archaeological
20 materials, particularly Japanese manufactured items, with comparative value.

21 The property was field checked in 2020, with limited access. All of the resources observed, including
22 workers' camps, an irrigation ditch, and a portion of the East Levee, have been substantially changed
23 since the 1993 evaluation and the 2012 field check (Appendix 19A, under the *Findings for Individual*
24 *Resources and Districts* section, *Bacon Island Rural Historic District (Map ID 539)* subsection). Two of
25 the three remaining labor camps, Camps 2 and 12, remain contributing built-environment
26 resources; the third camp no longer has built-environment elements, but does likely retain an
27 archaeological deposit associated with the camp. Each of the two remaining camps retain essential
28 physical features enabling them to convey their historic character and historic information relative
29 to George Shima, his farming endeavors, and the continued significance of Bacon Island as a Rural
30 Historic District. The historic property boundary remains the entirety of Bacon Island, inclusive of
31 remaining camps, approximately 5,000 acres of fields, and the engineering elements including
32 siphons, canals, and spud ditches designed and built by George Shima that allowed their successful
33 cultivation (Appendix 19A, under the *Findings for Individual Resources and Districts* section, *Bacon*
34 *Island Rural Historic District (Map ID 539)* subsection).

35 **U.S. Naval Communication Station Stockton (Map ID 588)**

36 The U.S. Naval Communication Station Stockton is on Rough and Ready Island in west Stockton. A
37 1995 evaluation determined that the property was eligible as a historic district under NRHP Criteria
38 A and C for its function and design as an innovative supply annex—the first of its kind to be solely
39 design for palletized cargo, which was instrumental in supplying U.S. troops during World War II.
40 Research and survey conducted for this project identify that several resources previously identified
41 as district contributors have been demolished, are substantially altered, or are not directly
42 associated with the district's significance or period of significance and should be reclassified as non-
43 contributors. The district remains eligible for the NRHP and CRHR (Appendix 19A, under the

1 *Findings for Individual Resources and Districts* section, *U.S. Naval Communication Station Stockton*
2 (*Map ID 588*) subsection).

3 **19.2 Applicable Laws, Regulations, and Programs**

4 The applicable laws, regulations, and programs considered in the assessment of project impacts on
5 cultural resources are indicated in this section, in Section 19.3.1, *Methods for Analysis*, or in the
6 impact analysis, as appropriate. Applicable laws, regulations, and programs associated with state
7 and federal agencies that have a review or potential approval responsibility have also been
8 considered in the development of CEQA impact thresholds or are otherwise considered in the
9 assessment of environmental impacts. A listing of some of the agencies and their respective
10 potential review and approval responsibilities, in addition to those under CEQA, is provided in
11 Chapter 1, *Introduction*, Table 1-1. A listing of some of the federal agencies and their respective
12 potential review, approval, and other responsibilities, in addition to those under NEPA, is provided
13 in Chapter 1, Table 1-2.

14 **19.2.1 Confidentiality Considerations**

15 CEQA and the California Public Records Act restrict the amount of information regarding cultural
16 resources that can be disclosed in an EIR to avoid the possibility that such resources could be
17 subject to vandalism or other damage (*Clover Valley Foundation v. City of Rocklin* (2011) 197
18 Cal.App.4th 200, 219). The CEQA Guidelines prohibit an EIR from including “information about the
19 location of archaeological resources and sacred lands, or any other information that is subject to the
20 disclosure restrictions of Section 6254 of the Government Code [(part of the California Public
21 Records Act)]” (CEQA Guidelines § 15120(d)). In turn, California Government Code Section 6254 of
22 the California Public Records Act lists as exempt from public disclosure any records “of Native
23 American graves, cemeteries, and sacred places and records of Native American places, features, and
24 objects described in Sections 5097.9 and 5097.993 of the [California] Public Resources Code
25 maintained by, or in the possession of, the Native American Heritage Commission, another state
26 agency, or a local agency” (Gov. Code § 6254[r]).

27 California Public Resources Code Sections 5097.9 and 5097.993 list the Native American places,
28 features, and objects, the records of which are not to be publicly disclosed under the California
29 Public Records Act: “any Native American sanctified cemetery, places of worship, religious or
30 ceremonial site, or sacred shrine located on public property” (Pub. Resources Code § 5097.9) and
31 any “Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in
32 the California Register of Historic Resources ..., including any historic or prehistoric ruins, any burial
33 ground, any archaeological or historic site, any inscriptions made by Native Americans at such a site,
34 any archaeological or historic Native American rock art, or any archaeological or historic feature of a
35 Native American historic, cultural, or sacred site ...” (Pub. Resources Code § 5097.993(a)(1)).

36 The California Public Records Act also generally prohibits disclosure of archaeological site locations
37 and records. Government Code Section 6254.10 provides: “Nothing in [the Act] requires disclosure
38 of records that relate to archaeological site information and reports maintained by, or in the
39 possession of ... a local agency, including the records that the agency obtains through a consultation
40 process between a California Native American tribe and a state or local agency.”

1 These authorities prohibit the disclosure of records and information concerning the Delta region's
2 archaeological, cultural, and historical resources in public documents including this Draft EIR. DWR
3 believes confidentiality of the site locations of certain archaeological, cultural, and historical
4 resources found in the region is necessary to prevent vandalism to the resources. Public release of
5 information on the sites may allow their discovery by trespassers, leading to potential looting.
6 DWR's position is consistent with the intent of NHPA Section 304(a):

7 The head of a Federal agency ... shall withhold from disclosure to the public, information about the
8 location, character, or ownership of a historic resource if the Secretary and the agency determine
9 that disclosure may ... risk harm to the historic resources ...

10 As a result, specific descriptions of certain archaeological, cultural, and historical resources are not
11 provided in this chapter. For the preservation of the sites, specific information about the locations
12 and nature of findings at the resources cannot be included in the CEQA documents. Site-specific
13 content and location information will be reviewed by appropriate agency officials on a need-to-
14 know basis, thereby protecting the confidential information regarding location and content of the
15 sites. DWR believes protecting the confidentiality of certain information concerning the location and
16 nature of the resources from public disclosure is the best way to preserve the integrity of the
17 valuable resources within the Delta region.

18 19.3 Environmental Impacts

19 This section describes the direct and cumulative environmental impacts associated with cultural
20 resources that would result from project design, construction, operation, and maintenance of the
21 project and compensatory mitigation. It describes the methods used to determine the impacts of the
22 project and lists the thresholds used to conclude whether an impact would be significant. Measures
23 to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts
24 are provided. Indirect impacts are discussed in Chapter 31, *Growth Inducement*.

25 19.3.1 Methods for Analysis

26 This section analyzes design-, construction-, and operations-related effects on cultural resources in
27 the study area. For the preparation of this Draft EIR, the information used to conduct the
28 environmental impact analysis came primarily from the following sources.

- 29 ● Technical reports to identify cultural resources in the AI-BE and AI-A that are included as
30 Appendix 19A, *Historical Resources Survey and Evaluation Report*, and Appendix 19B,
31 *Archaeological Sensitivity Analysis Report* (Confidential). These technical reports include:
 - 32 ○ The identification of the study area and the AI-BE and AI-A.
 - 33 ○ The identification of previously identified NRHP- and CRHR-eligible and listed built-
34 environment historical resources within the study area and areas of impact.
 - 35 ○ The identification of previously identified archaeological resources and archaeological
36 resource sensitivity within the study area and areas of impact.
- 37 ● Project description and Engineering Project Reports prepared for the Delta Conveyance Project
38 (Delta Conveyance Design and Construction Authority 2022a, 2022b).
- 39 ● GIS data layers of proposed water conveyance facilities.

- 1 • Analysis of the proposed construction and operational activities for potential to affect cultural
2 resources within the vicinity, using field visits, aerial mapping, GIS, and/or project engineering.
- 3 • Application of thresholds to determine if the field investigations, construction, operation,
4 maintenance, or compensatory mitigation activity has the potential to cause significant impacts
5 on cultural resources, based on Section 19.3.2, *Thresholds of Significance*.
- 6 • Appropriate avoidance, minimization, and mitigation measures where significant impacts are
7 identified.

8 **19.3.1.1 Impact Mechanisms**

9 The types of construction activities that have the potential to affect cultural resources include:

- 10 • Ground-disturbing construction that disturbs or damages previously identified post-contact or
11 early Native American archaeological resources and impairs the constituent depositions in the
12 resource and their utility for answering archaeological research questions.
- 13 • Ground-disturbing construction that disturbs or damages unanticipated post-contact or early
14 Native American archaeological resources and impairs the constituent depositions in the
15 resource and their utility for answering archaeological research questions.
- 16 • Ground-disturbing construction that unearths and damages human remains.
- 17 • Ground-disturbing activities performed as part of the field investigations, which could include
18 geotechnical, hydrogeological, agronomic, and construction test projects (geotechnical
19 investigations).
- 20 • Construction activities that create increased opportunities for vandalism or looting that would
21 physically disturb or destroy archaeological resources.
- 22 • Physical damage or direct demolition of character-defining features of built-environment
23 resources.
- 24 • Physical damage or direct demolition of contributing elements or character-defining features of
25 multi-component historic built resources.
- 26 • Direct impacts on individual resources creating significant impacts on rural historic landscapes,
27 where the individual resource is a constituent element of the rural historic landscape.
- 28 • Construction in the vicinity of a resource (including districts and rural historic landscapes) that
29 removes features of the surrounding setting, where the setting is an integral part of the
30 resource.
- 31 • Construction in the vicinity of a resource (including districts and rural historic landscapes) that
32 introduces new physical features that are incongruent with the setting, where the setting is an
33 integral part of the resource.
- 34 • Introduction of new, permanent sources of sound or activities in the vicinity of a resource
35 (including districts and rural historic landscapes) that would exceed the existing ambient noise
36 levels and would be inconsistent with the setting, where a quiet or peaceful setting is an integral
37 part of the resource.

38 The general construction activities anticipated for the Delta Conveyance Project are summarized
39 here. Refer to Chapter 3, *Description of the Proposed Project and Alternatives*, for a complete project

1 description. The construction activities for the construction of the Delta Conveyance Project
2 Alternatives include the construction of intakes, tunnels and tunnel shafts, a pumping plant (either
3 the South Delta Pumping Plant or the Bethany Reservoir Pumping Plant), the Southern Complex
4 facilities or the Bethany Complex facilities, road modifications including park-and-ride lots, railroad
5 modifications, electric power transmission facilities, SCADA facilities, and emergency response
6 facilities. Project components with potential to cause impacts on cultural resources include the
7 following.

- 8 ● Intake Facilities. The construction of intake facilities along the Sacramento River, at the northern
9 end of the study area, has the potential to affect built-environment and archaeological resources.
10 The intake facilities would be new features within the area of impact (AI-BE and AI-A) and
11 would include the construction of new and relocated levees with roadways, new intake facilities
12 situated on and adjacent to the new and relocated levees, parking areas, sedimentation basins,
13 sediment drying lagoons, utilities, modified roadways, support buildings, appurtenant
14 structures, and emergency response facilities.
- 15 ● Tunnel Shafts. The project includes tunnel launch shafts, reception shafts, launch/reception
16 shafts, emergency response facilities, and maintenance shafts. The construction of the shafts has
17 the potential to affect built-environment and archaeological resources. Generally, the shafts
18 would include a shaft pad, constructed above the existing grade, with the shaft itself extending
19 above the shaft pad (to at least the 200-year flood level plus year 2100 sea rise). The shaft pads
20 would facilitate construction and provide access for equipment. The height of the shafts
21 throughout the AI-BE would extend to a maximum height of -14 to 54 feet above the existing
22 surface, with some shafts below the existing grade level altogether.
- 23 ● Tunnels. The construction of the tunnels, using tunnel boring machines (TBMs) do not have the
24 potential to affect built-environment or archaeological resources, except for the construction of
25 the shafts and the storage of the reusable tunnel material (RTM).
- 26 ● Reusable Tunnel Material. As part of the Delta Conveyance Project, the earthen RTM that would
27 be removed as part of the tunneling, would require temporary and permanent on-site
28 processing and storage. If no use has been identified for RTM, it may be permanently stored.
29 Temporary and permanent RTM processing and storage has the potential to affect built-
30 environment and archaeological resources.
- 31 ● Levees. The alteration, improvement, and construction of levees at Twin Cities Complex, Bouldin
32 Island, and Lower Roberts Island, included as part of the project have the potential to impact
33 built-environment and archaeological resources.
- 34 ● Southern Complex. The Southern Complex (on Byron Tract and west of Byron Highway) has the
35 potential to affect built-environment and archaeological resources. The complex would include
36 tunnel shafts, the South Delta Pumping Plant, the Southern Forebay, outlet structures, control
37 structures, support buildings, appurtenant structures, emergency response facilities, concrete
38 batch plants, fencing, lighting, roads, and railroad facilities.
- 39 ● Bethany Complex. The Bethany Complex (southeast of Clifton Court Forebay) has the potential
40 to affect built-environment and archaeological resources. The complex would include the
41 Bethany Reservoir Pumping Plant and Surge Basin, Bethany Reservoir Aqueduct, the Bethany
42 Reservoir Discharge Structure, support buildings, appurtenant structures, emergency response
43 facilities, concrete batch plants, fencing, lighting, and roads.

- 1 • Concrete Batch Plants. One or two concrete batch plants, depending on the alternative, would be
2 built to support construction activities.
- 3 • Access Roads. The project would include substantial transportation facility improvements to
4 serve the construction and material delivery processes. These project features have the
5 potential to affect built-environment and archaeological resources.
- 6 • Rail Spurs and Rail-Served Materials Depots. The project would include rail-served materials
7 depots with rail sidings would be used to provide tunnel liner segments, TBM equipment, and
8 aggregate to tunnel launch shaft sites and sometimes to convey RTM. These project features
9 have the potential to affect built-environment and archaeological resources.
- 10 • Electric Power Transmission and SCADA Facilities. The project would include new and modified
11 power lines and SCADA facilities. Where these features are co-located with existing overhead
12 infrastructure, there is no potential to affect built-environment resources and low potential to
13 impact archaeological resources. Where these features are below grade, there is no potential to
14 impact built-environment resources, except where the excavation is within an identified
15 resource, such as the Sacramento River Levee. In other situations, the modification of a new or
16 existing roadway below grade would not introduce new visual elements to the setting nor would
17 it physically impact built-environment resources. Below-grade power supply and SCADA
18 facilities have the potential to affect archaeological resources. These features have the potential
19 to affect built-environment and archaeological resources when they are new overhead lines that
20 are not co-located with an existing line.
- 21 • Park-and-Ride Lots. The construction of parking facilities has the potential to affect built-
22 environment and archaeological resources.

23 **19.3.1.2 Evaluation of Operations and Maintenance**

24 The operation of the Delta Conveyance Project has little potential to affect cultural resources. The
25 day-to-day operation of the project involves the conveyance of water through features constructed
26 as part of this project, and as indicated and described in more detail in Chapter 5, *Surface Water*,
27 Section 5.3.2.2, *Project Alternatives*, these flows are expected to remain consistent or decrease from
28 their current conditions under the project. Because of this, there is little risk of increased erosion
29 which could damage archaeological resources. Likewise, because the project is not itself a historical
30 resource, operations would not have impacts on built-environment historical resources. Therefore,
31 operations of the project would not affect cultural resources.

32 Maintenance of the project is not expected to result in impacts on cultural resources. Maintenance
33 would occur within areas where any impacts on cultural resources would have already occurred
34 during construction and addressed through mitigation measures for construction activities. As
35 discussed with operations, because the project features constructed as part of this project are not
36 themselves historical resources, maintenance of those features has no potential to affect historic
37 built resources. Maintenance activities would include accessing components of the conveyance
38 facility for inspection, cleaning, and repairs; such access would be from the intake access roads
39 constructed for such purpose. These activities would occur within areas where any impacts on
40 archaeological resources would have already occurred during construction and would already be
41 addressed through mitigation measures for construction activities. Therefore, maintenance of the
42 project would not affect archaeological resources.

1 19.3.2 Thresholds of Significance

2 This section describes the criteria and thresholds used to identify significant impacts on CEQA
3 historical resources, which includes unique archaeological resources if any are present, and human
4 remains. A significant impact would occur when the project would cause a substantial adverse
5 change to the significance of a historical resource or unique archaeological resource or disturb any
6 human remains, including those interred outside of formal cemeteries. CEQA Guideline Section
7 15064.5(b) states: “A project with an effect that may cause a substantial adverse change in the
8 significance of an historical resource is a project that may have a significant effect on the
9 environment.”

10 Effects on historical resources are considered significant for purposes of CEQA if the project
11 alternatives would do any of the following.

- 12 • Demolish or materially alter the qualities that justify the resource for inclusion or eligibility for
13 inclusion in the CRHR (CEQA Guidelines § 15064.5(b)(2)(A)).

14 For the purposes of this analysis, “materially altering or destroying qualities that justify the resource
15 for inclusion or eligibility” means altering the resource so that it can no longer convey its association
16 with a significant historical event or person, distinctive style or artistic value, or the potential to
17 yield information important in history or prehistory (14 Cal. Code Regs. § 4852(b)). The qualities
18 that justify a resource for inclusion in the CRHR include both the resource’s character-defining
19 features and its historical integrity. Character-defining features are the distinct descriptive features
20 that give the resource its unique identity. Historical integrity is the resource’s ability to convey its
21 historical significance, which is generally discussed in terms of seven aspects of integrity.

- 22 • Location: where the historical resource was constructed or the place where the historic event
23 occurred.
- 24 • Design: the combination of elements that create the historic form, plan, space, structure, and
25 style of a historical resource. This includes organization of space, proportion, scale, technology,
26 ornamentation, and materials. This is applicable to larger properties for the historic way in
27 which the buildings, sites, and structures are related.
- 28 • Setting: the physical environment of a historical resource. It refers to the historic character of
29 the property. It includes the historical relationship of the property to surrounding features and
30 open space. These include topographic features, vegetation, simple manmade paths or fencing
31 and the relationships between buildings, structures, or open space.
- 32 • Materials: the physical elements that were combined during a particular period of time and in a
33 particular pattern or configuration to form the historical resource.
- 34 • Workmanship: the physical evidence of the crafts of a particular culture or people during a given
35 period in history. It may be expressed in vernacular methods of construction and plain finishes
36 or in highly sophisticated configuration and ornamental detailing.
- 37 • Feeling: the historical resource’s expression of the aesthetic or historic sense of a particular
38 period of time. It results from the presence of physical features that, taken together, convey the
39 property’s historic character.
- 40 • Association: the direct link between an important historic event or person and a historical
41 resource. A historical resource retains association if it is the place where the event or activity
42 occurred and is sufficiently intact to convey that relationship to an observer. Like feeling,

1 association requires the presence of physical features that convey a property's historic
2 character.

3 Effects on unique archaeological resources are considered significant for purposes of CEQA if the
4 project alternatives would do any of the following.

- 5 • Demolish or materially impair the characteristics that allow a site to qualify as a unique
6 archaeological resource (Pub. Resources Code § 21083.2(g)). “Demolishing or materially
7 impairing a unique archaeological resource” means altering the ability of the site to convey one
8 or more of the following characteristics (CEQA Guidelines § 15064.5(b)(2)(C)).
 - 9 ○ Data useful in important scientific questions associated with demonstrable public interest in
10 those questions.
 - 11 ○ The quality of being the oldest or best example of a type.
 - 12 ○ Association with an important person or event in history or prehistory (Pub. Resources
13 Code § 21083.2(g)).

14 Effects on buried human remains including those interred outside formal cemeteries are considered
15 significant for purposes of CEQA if the project alternatives would disturb or destroy the remains and
16 associated grave goods.

17 **19.3.2.1 Evaluation of Mitigation Impacts**

18 CEQA also requires an evaluation of potential impacts caused by the implementation of mitigation
19 measures. Following the CEQA conclusion for each impact, the chapter analyzes potential impacts
20 associated with implementing both the Compensatory Mitigation Plan and the other mitigation
21 measures required to address potential impacts caused by the project. Mitigation impacts are
22 considered in combination with project impacts in determining the overall significance of the
23 project. Additional information regarding the analysis of mitigation measure impacts is provided in
24 Chapter 4, *Framework for the Environmental Analysis*.

25 **19.3.3 Impacts and Mitigation Approaches**

26 The following section describes the analysis of impacts that would result from the No Project
27 Alternative and the nine project alternatives.

28 **19.3.3.1 Impacts of the No Project Alternative**

29 As described in Chapter 3, *Description of the Proposed Project and Alternatives*, CEQA Guidelines
30 Section 15126.6 directs that an EIR evaluate a specific alternative of “no project” along with its
31 impact. The No Project Alternative in this Draft EIR represents the circumstances under which the
32 project (or project alternative) does not proceed and considers predictable actions, such as projects,
33 plans, and programs, that would be predicted to occur in the foreseeable future if the Delta
34 Conveyance Project is not constructed and operated. This description of the environmental
35 conditions under the No Project Alternative first considers how cultural resources could change
36 over time and then discusses how other predictable actions could affect cultural resources.

1 **Future Cultural Resources Conditions**

2 For cultural resources, future conditions are not anticipated to substantially change compared to
3 existing conditions because land policies and resulting development are not expected to change if
4 the project (or project alternative) does not proceed. However, indirect impacts on cultural
5 resources within the Delta may occur under the No Project Alternative as the result of changes in
6 upstream hydrologic conditions, sea level rise, and continued seismic risk to Delta levees, which
7 could result in the inundation of cultural resources. Also, changes in the setting of the Delta may
8 occur as a result of sea level rise and upstream hydrologic conditions. In addition, immediate and
9 potentially long-term changes to cultural resources could occur under the No Project Alternative
10 because of seismic events, levee failure, and the inundation of cultural resources or their setting.
11 Other cultural resources could be impacted by changes in use patterns and potential neglect as a
12 result in changes in use patterns.

13 **Predictable Actions by Others**

14 A list and description of actions included as part of the No Project Alternative are provided in
15 Appendix 3C, *Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions*.
16 As described in Chapter 4, *Framework for the Environmental Analysis*, the No Project Alternative
17 analyses focus on identifying the additional water supply-related actions public water agencies may
18 opt to follow if the Delta Conveyance Project does not occur.

19 Public water agencies participating in the Delta Conveyance Project have been grouped into four
20 geographic regions. The water agencies within each geographic region would likely pursue a similar
21 suite of water supply projects under the No Project Alternative (Appendix 3C, *Defining Existing*
22 *Conditions, No Project Alternative, and Cumulative Impact Conditions*). Construction of water supply
23 reliability projects would result in ground-disturbing activities and construction of aboveground
24 facilities that could destroy cultural resources. Projects pursued would depend primarily on the
25 geographic location of the water agency. For purposes of this analysis, water agencies have been
26 divided into four geographic areas: northern coastal, northern inland, southern coastal, southern
27 inland. Cultural resources are likely within the area of potential impact for each of the water
28 agencies. Built-environment historical resources and archaeological resources are spread
29 throughout these regions. For the northern coastal region, the projects that would likely affect
30 cultural resources include the construction of water recycling facilities, groundwater management
31 facilities, and desalination facilities. For the northern inland region, the projects that would likely
32 affect cultural resources include the construction of water recycling facilities, and groundwater
33 management facilities. For the southern coastal region, the anticipated types of projects that would
34 affect cultural resources include the construction of water recycling facilities, groundwater
35 management facilities, and desalination facilities. For the southern inland region, the anticipated
36 types of projects that would affect cultural resources include the construction of water recycling
37 facilities, and groundwater management facilities.

38 Desalination projects would most likely be pursued in the northern and southern coastal regions.
39 The southern coastal region would likely require larger and more desalination projects than the
40 northern coastal region to replace the water yield that otherwise would have been received through
41 the Delta Conveyance Project if water suppliers pursue desalination to meet demands. These
42 projects would be sited near the coast. Groundwater recovery (brackish water desalination) would
43 involve similar types of ground disturbance but could occur across the northern inland, southern
44 coastal, southern inland regions and in both coastal and inland areas, such as the San Joaquin Valley.

1 Grading and excavation at the desalination and groundwater recovery plant sites would be
2 necessary for construction of foundations, and trenching would occur for installation of water
3 delivery pipelines and utilities. Desalination projects would involve the construction of aboveground
4 facilities. Ground-disturbing activities required to construct these projects could unearth, expose, or
5 destroy archaeological resources. The construction of aboveground facilities could add new features
6 to the settings of built-environment resources.

7 The northern and southern coastal regions are also most likely to explore constructing groundwater
8 management projects. The southern coastal region would require more projects than the northern
9 coastal region under the No Project Alternative. Groundwater management projects would occur in
10 association with an underlying aquifer but could occur in a variety of locations and therefore would
11 affect a variety of geologic units. Construction activities for each project could require excavation for
12 the construction of the recharge basins, conveyance canals, and pipelines and drilling for the
13 construction of recovery wells (with completion intervals between approximately 200 and 900 feet
14 below ground surface). Construction activities would include site clearing, excavation and backfill,
15 and construction of basins, conveyance canals, pipelines, pump stations, and the turnout. Grading
16 activities associated with the construction of recharge basins would involve earthmoving,
17 excavation, and grading. Canals and pipelines would likely be constructed using typical open trench
18 construction methods. In some cases where siphons would be installed, jack and bore methods
19 could be used to tunnel under and avoid disruption of surface features. Ground-disturbing activities
20 in these types of units could unearth, expose, or destroy archaeological resources. The construction
21 of aboveground facilities could add new features to the setting of built-environment resources.

22 Water recycling projects could be pursued in all four regions. The northern inland region would
23 require the fewest number of wastewater treatment/water reclamation plants, followed by the
24 northern coastal region, followed by the southern coastal region. The southern inland region would
25 require the greatest number of water recycling projects to replace the anticipated water yield that it
26 would otherwise receive through the Delta Conveyance Project. These projects would be located
27 near water treatment facilities. Construction techniques for water recycling projects would vary
28 depending on the type of project (e.g., for landscape irrigation, groundwater recharge, dust control,
29 industrial processes) but could require earth moving activities, grading, excavation, and trenching.
30 Because construction would involve new above-grade facilities and ground-disturbing activities,
31 such actions could occur in the vicinity of cultural resources. In the southern inland region where a
32 greater number of projects would be needed as a substitute for the Delta Conveyance Project, the
33 potential for impact would also be greatly increased. Ground-disturbing activities in these types of
34 units could unearth, expose, or destroy archaeological resources. The construction of aboveground
35 facilities could add new features to the setting of built-environment resources.

36 Water efficiency projects could be pursued in all four regions and involve a wide variety of project
37 types, such as flow measurement or automation in a local water delivery system, lining of canals, use
38 of buried perforated pipes to water fields, and additional detection and repair of commercial and
39 residential leaking pipes. These projects could occur anywhere in the regions and most would
40 involve little ground disturbance or would occur in previously disturbed areas. Many of these canal
41 systems are cultural resources themselves, however, and could be affected by these activities.

42 **19.3.3.2 Impacts of the Project Alternatives on Cultural Resources**

43 *A Historical Resources Survey and Evaluation Report* was prepared to identify built-environment
44 historical resources located in the AI-BE (included as Appendix 19A). An archaeological sensitivity

1 analysis was conducted to identify previously recorded archaeological resources as well as the
2 sensitivity for as-yet-unidentified archaeological resources (included as confidential Appendix 19B,
3 *Archaeological Sensitivity Analysis Report*).

4 A total of 31 eligible built-environment resources and 34 archaeological resources have the
5 potential to be directly affected by project construction activities described in Section 19.3.1.1,
6 *Impact Mechanisms*. The specific nature and location of the impact mechanism for each affected
7 resource is also described in Appendix 19C, Tables 19C-1 through 19C-3, and Appendix 19D, Tables
8 19D-1 through 19D-3. The identified built-environment resources have been evaluated and found
9 eligible for listing in the NRHP and CRHR. Of the 34 archaeological resources, three have been
10 evaluated for listing in the NRHP and CRHR. Of these, two are eligible as contributors to a historic
11 district and one is eligible on its own.

12 As described in Chapter 4, *Framework for the Environmental Analysis*, the organization of the
13 analyses of the impacts for cultural resources follows a different format that is tailored to the
14 resource type. Temporary construction activities associated with building the conveyance facilities
15 would not affect built-environment resources unless demolition is required because temporary
16 construction activities, such as construction staging, storage, and temporary on-site access roads,
17 would be returned to agricultural or habitat uses once construction of the project is complete.
18 However, if demolition is required in temporary work areas, the resulting impact would be
19 permanent. Temporary construction activities that include ground disturbance, such as construction
20 of staging areas and temporary on-site access roads and utilities, have the potential to permanently
21 affect archaeological resources and would be better characterized as a permanent impact. As a
22 result, the organization of the analysis of impacts for cultural resources considers temporary
23 activities as part of construction with the potential for permanent impacts on cultural resources.

24 There are no reasonably foreseeable impacts on cultural resources that would arise from operations
25 and maintenance of the project. As a result, impacts arising from operations and maintenance are
26 not included in the analyses of the impacts on cultural resources.

27 **Impact CUL-1: Impacts on Eligible Built-Environment Historical Resources Resulting from** 28 **Construction and Operation of the Project**

29 There are 31 identified built-environment historical resources within the AI-BE for all of the project
30 alternatives. Each of the project activities listed in Section 19.3.1.1 has the potential to affect built-
31 environment historical resources through the construction of new features within the setting of
32 built-environment resources, the alteration of existing features within the setting of built-
33 environment resources, or the physical alteration of character-defining features within the
34 boundaries of built-environment resources. The specific construction activity that would cause an
35 impact on each built-environment resource is described in Appendix 19C, *Impact Analysis of Project*
36 *Alternatives on Built-Environment Historical Resources*. More specifically, these impact mechanisms
37 have the potential to alter the integrity of built-environment historical resources. As described in
38 Section 19.3.2, *Thresholds of Significance*, *integrity* is defined as the authenticity of a historical
39 resource's physical characteristics so that it is recognizable as a historical resource and retains its
40 ability to convey its historical associations or attributes. The evaluation of integrity is grounded in
41 the evaluator's understanding of a property's physical features and how these features relate to its
42 historical associations or attributes. Both the CRHR and NRHP define seven aspects of integrity:
43 location, design, setting, materials, workmanship, feeling, and association.

1 Construction noise and operational noise have no potential to affect built-environment historical
2 resources within the AI-BE. Noise would typically only have the potential to affect those historical
3 resources where a quiet setting is critical to the public's understanding of the resource. Typically,
4 such historical resources include churches, museums, or concert halls. For the project, a quiet
5 setting is not integral to any identified historical resources in the AI-BE. Noise generated by
6 construction activities does not have the potential to affect built-environment historical resources,
7 because that noise is temporary in nature. Furthermore, no permanent noise impacts from
8 operation and maintenance were identified (Chapter 24, *Noise and Vibration*). The noise that would
9 arise from the operation of the project would not exceed the existing ambient noise levels. Noise
10 from the project does not have the potential to affect built-environment resources.

11 The construction of project features within the setting of built-environment historical resources has
12 the potential to cause permanent impacts on resources by altering the setting, feeling, or association,
13 where the setting, feeling, or association are key aspects of the resource's historical integrity and
14 where the loss of these aspects of integrity would materially alter qualities that qualify the resource
15 for CRHR eligibility. The construction of the following project features would have impacts under
16 the following scenarios (see resource-specific analysis in Appendix 19C).

- 17 • For new intakes adjacent to or immediately across the river from historical resources, the
18 construction of the new intake facility would materially alter the resource's integrity of setting,
19 feeling, and association by introducing a twenty-first century engineering feature whose
20 footprint is as large as, or larger than, most adjacent parcels. In the vicinity of the new intakes,
21 the setting remains rural and agricultural, with only small-scale development occurring within
22 the past 50 years. The intake facility would diminish historical resources' ability to convey their
23 significance by adding features that are not compatible with the landscape in terms of size,
24 massing, scale, and use. These incompatibilities would undermine the integrity of the historical
25 resources' setting making it less recognizable as a product of its time and historical function.
26 Based on changes to the setting, feeling, and association, this would result in a significant and
27 unavoidable impact.
- 28 • For new intakes partially visible from historical resources, the construction of the new intake
29 facility would materially alter the resource's integrity of setting, feeling, and association by
30 introducing a twenty-first-century engineering feature whose footprint is as large as, or larger
31 than, the boundaries of the nearby built-environment historical resources. In the vicinity of the
32 new intakes, the setting remains rural and agricultural, with only small-scale development
33 occurring within the past 50 years. While the proposed facilities are not compatible with the
34 existing landscape in terms of size, massing, scale, and use, the obscured view of the intake
35 facility, combined with mitigation measures, would result in the rural and agricultural historical
36 resources' retained ability to convey their significance. New intakes that are partially visible
37 from historical resources would diminish the historical resources' ability to convey significance.
38 Partially visible intakes would change the setting, feeling, and association of historical resources
39 that can be mitigated to a less-than-significant impact.
- 40 • For the construction of launch, reception, and maintenance shafts within the boundaries of a
41 historical resource or within the viewshed of historical resources, where that viewshed or
42 resource includes open agricultural land, the construction of the new launch, reception, and
43 maintenance shafts would materially alter the resource's integrity of setting, feeling, and
44 association. The integrity of the historical resource's setting would be diminished by introducing
45 a twenty-first-century engineering feature whose heights extend from -14 to 54 feet above
46 existing grade in an area characterized by large flat vistas over an agricultural region. While

1 some late-twentieth- and early twenty-first-century features are within the viewsheds of the
2 open, agricultural land, those features are smaller in scale and consistent with the setting, such
3 as agricultural processing facilities, residential buildings, bridges, levees, or roadways. The
4 launch, reception, and maintenance shafts would materially alter the integrity of the historical
5 resources' setting making it less recognizable as a product of its time and historical function.
6 Based on changes to the setting, feeling, and association, this would result in a significant and
7 unavoidable impact.

- 8 ● For the construction of launch, reception, and maintenance shafts within the viewshed of
9 historical resources, where the historical resource is public infrastructure, such as power lines,
10 canals, or deep water channels, the construction of the new launch, reception, and maintenance
11 shafts would not materially alter the resource's integrity of setting, feeling, and association
12 because twenty-first century engineering features are consistent with the settings of those
13 resources. These types of infrastructure resources were created to facilitate regional
14 development. The launch, reception, and maintenance shafts would cause a less-than-significant
15 impact.
- 16 ● For minor road realignment, road resurfacing, and other minor roadway changes within the
17 setting of historical resources, the construction of these features would not impact any aspects
18 of integrity of a historical resource. The minor alteration of an existing feature within the
19 historical resource's setting would not materially alter the historical resource's integrity
20 because it would be an in-kind alteration of an existing feature and would not change the
21 setting. The roadway alterations would cause a less-than-significant impact.
- 22 ● For the construction of new access roads, the construction of these features could affect aspects
23 of integrity of a historical resource. The construction of new roadways could materially alter a
24 historical resource if it is incongruous to the setting or if it causes physical damage to a
25 historical resource, but with mitigation measures, the impact of new access roads would cause a
26 less-than-significant impact.
- 27 ● For the construction of park-and-ride lots within the viewshed of historical resources, the
28 construction of parking areas is located within more urban areas of the AI-BE and are consistent
29 with the setting of resources there, so the construction of new, at-grade parking would not
30 introduce new types of features to the setting. The construction of park-and-ride facilities would
31 cause a less-than-significant impact.
- 32 ● The construction of the Southern Complex has the potential to visually affect built-environment
33 historical resources. However, these existing historical resources are water conveyance features
34 (Delta-Mendota Canal and the Delta Field Division of the SWP) or other public infrastructure
35 projects. New water conveyance features are consistent with the setting of both types of
36 resources. Furthermore, for both resources, the integrity of setting is not a key aspect of their
37 integrity to convey their significance. The visual impact of construction of the Southern Complex
38 would cause a less-than-significant impact.
- 39 ● The construction of the Bethany Complex has the potential to visually affect built-environment
40 historical resources. However, these existing historical resources are water conveyance features
41 (Delta-Mendota Canal and the Delta Field Division of the SWP) or other public infrastructure
42 projects. New water conveyance features are consistent with the setting of both types of
43 resources. Furthermore, for both resources, the integrity of setting is not a key aspect of their
44 integrity to convey their significance. The visual impact of construction of the Bethany Complex
45 would cause a less-than-significant impact.

- 1 • For construction staging within the viewshed of historical resources, there is no potential for
2 project features to affect historical resources because construction staging areas would be
3 restored to their preconstruction conditions in the vicinity of tunnel and access road staging. In
4 areas of new building construction, the staging areas are in close proximity to new building
5 construction, so the staging activities (gravel, grading, and laydown areas) would have no
6 additional impact. The temporary work would have no impact.

7 The construction of project features within the setting of built-environment historical resources has
8 the potential to cause permanent impacts on resources through alterations, additions, or
9 construction within the historical resource boundaries. Such activities would alter the resource's
10 integrity of design, materials, workmanship, setting, feeling, or association. Based on changes in
11 integrity, this would result in a significant impact. The construction of the following project features
12 would have physical impacts under the following scenarios (see resource-specific analysis in
13 Appendix 19C):

- 14 • For the construction of launch, reception, and maintenance shafts within the boundaries of
15 historical resources that are a rural cultural landscape or rural historic district, especially where
16 that resource comprises open, flat agricultural land, the construction of the new launch,
17 reception, and maintenance shafts would materially alter the resource's integrity of setting,
18 feeling, and association by introducing a twenty-first century engineering feature whose heights
19 extend from 14 feet below the existing grade to 54 feet above grade in an area characterized by
20 large, flat vistas over an agricultural region. The launch, maintenance, and reception shafts
21 would diminish the resources' ability to convey its significance to the public. The construction of
22 launch, reception, and maintenance shafts within historical resource boundaries would cause a
23 significant impact.
- 24 • The construction of the Southern Complex intersects with the boundaries of two built-
25 environment historical resources and has the potential to cause a physical impact. Both of these
26 resources are water conveyance features (Delta-Mendota Canal and the Delta Field Division of
27 the SWP). The construction has the potential to materially alter the historical resources'
28 qualities of design, materials, and workmanship, which are key aspects of their ability to convey
29 their significance. The construction of the Southern Complex would cause a significant impact.
- 30 • The construction of the Bethany Complex intersects with the boundaries of two built-
31 environment historical resources and has the potential to cause a physical impact. Both of these
32 resources are water conveyance features (Delta-Mendota Canal and the Delta Field Division of
33 the SWP). The construction has the potential to impact the historical resources' qualities of
34 design, materials, and workmanship, which are key aspects of their historical integrity and
35 convey their significance. The construction of the Bethany Complex would have a significant
36 impact.
- 37 • The construction of some access roads and railroads would be within the boundaries of
38 historical resources and would span over historical resources. Access roads and railroads would
39 span over the Mokelumne Aqueduct and are proposed within the boundaries of U.S. Naval
40 Communication Station Stockton. The construction of these features within the boundaries of
41 these resources is consistent with the resource and could minimally affect the resource's
42 integrity of design, materials, and workmanship, by adding modern features outside the
43 historical resource's period of significance. That impact could be mitigated, however. The
44 construction of the access roads and railroads would cause a significant impact.

- 1 • The construction of access roads and levee improvements within boundaries of rural historic
2 districts have the potential to cause a significant impact on historical resources if those features
3 are new elements within the boundary of the historical resource. Where the project features are
4 in-kind or alterations of existing features, those project features would cause a less-than-
5 significant impact on built-environment historical resources. Where the project features are
6 new or inconsistent with the resource, those features would materially alter the integrity of
7 materials, workmanship, feeling, and association and alter the resource’s ability to convey its
8 significance as a historic agricultural landscape, causing a significant and unavoidable impact.
- 9 • The construction of intakes within the levee prism of Sacramento River Levee would not
10 materially alter the historical integrity of the historical resource. The Sacramento River Levee
11 was designed, in part, to increase river-adjacent development, so the installation of a twenty-
12 first century engineering feature is consistent with the original intent of the resource. The levee
13 is monolithic in its design so its features are largely consistent throughout the alignment.
14 Furthermore, within the overall context of the whole Sacramento River Levee, the construction
15 of the intakes affects a small portion of the overall resource and this section of the resource is
16 the same as the rest of the alignment. The construction of intakes within the Sacramento River
17 Levee would materially alter the resource’s integrity of design and materials, causing a
18 significant impact.
- 19 • Depending on the construction techniques used in the vicinity of resources, damage from
20 construction vibration would occur if vibration exceeds 0.12 peak particle velocity (PPV) (Table
21 19-4). If damage did occur as a result of construction vibration, the resource’s integrity of
22 design, materials, and workmanship could be materially altered, causing a significant impact.
- 23 • Because temporary work areas are planned within the boundaries of one historical resource,
24 there is no way to eliminate the risk of materially altering the resource’s integrity of design,
25 materials, and workmanship as a result of damage sustained due to construction activities,
26 causing a significant impact.

27 The construction of project features has the potential to cause damage to fragile built-environment
28 historical resources that are susceptible to vibration damage. Damage to these resources may occur
29 when the single-event source vibration generates a PPV in inches per second of 0.3 PPV, or when a
30 continuous source causes vibration at 0.12 PPV (Federal Transit Administration 2018:182–187;
31 Johnson and Hannen 2015:2–10). Table 19-4 shows that vibratory pile drivers and the vibratory
32 rollers have the potential to affect built-environment historical resources, depending on the distance
33 of the construction activity from the built features within the historical resource boundaries (see
34 resource-specific analysis in Appendix 19C, and Chapter 24).

35 **Table 19-4. Continuous Source Vibration Levels Commonly Generated by Construction Equipment**

Equipment	PPV at 25 Feet	PPV at 40 Feet	PPV at 50 Feet	PPV at 100 Feet	PPV at 160 Feet	PPV at 280 Feet
Impact pile driver	1.518*	0.750*	0.540*	0.190*	0.094	0.040
Vibratory pile driver	0.644*	0.318*	0.228*	0.081	0.040	0.017
Vibratory roller	0.210*	0.104	0.074	0.026	0.013	0.006
Auger drill (for hydrofraise and DMM walls)	0.089	0.032	0.017	0.011	0.005	0.002
Hoe ram	0.089	0.032	0.017	0.011	0.005	0.002
Large bulldozer	0.089	0.032	0.017	0.011	0.005	0.002

Equipment	PPV at 25 Feet	PPV at 40 Feet	PPV at 50 Feet	PPV at 100 Feet	PPV at 160 Feet	PPV at 280 Feet
Loaded trucks	0.076	0.027	0.015	0.010	0.005	0.002
Jackhammer	0.035	0.012	0.007	0.004	0.002	0.001

1 Source: Federal Transit Administration 2018:184.

2 DMM = deep mixing method; PPV = peak particle velocity.

3 * Levels where vibrations could cause damage to historical resources.

4

5 *All Project Alternatives*

6 All of the project alternatives have the potential to cause a significant impact on built-environment
7 historical resources. Each alternative would have a different magnitude of impact, which is
8 summarized in Appendix 19C. A narrative description of the potential impacts is presented in this
9 section.

- 10 • **Alternative 1** would result in the material alteration of setting of 7 built-environment historical
11 resources from the construction of Intakes B and C; the material alteration of setting, design,
12 materials, and workmanship of 5 built-environment historical resources from construction of
13 launch, reception, and maintenance shafts and shaft pads; material alteration of setting of 12
14 built-environment historical resources from the construction of roadways or utilities; material
15 alteration of setting of 1 built-environment historical resource from construction of other water
16 conveyance features; and the potential material alteration of design, materials, and
17 workmanship of 1 historic bridge from a construction staging area (Appendix 19C, Table 19C-1).
- 18 • **Alternative 2a** would result in the material alteration of setting of 11 built-environment
19 historical resources from the construction of Intakes A, B, and C; the material alteration of
20 setting, design, materials, and workmanship of 5 built-environment historical resources from
21 construction of launch, reception, and maintenance shafts and shaft pads; material alteration of
22 setting, design, materials, and workmanship of 8 built-environment historical resources from
23 the construction of roadways and utilities; material alteration of setting, design, materials, and
24 workmanship of 2 built-environment historical resources from construction of other water
25 conveyance features; and the potential material alteration of design, materials, and
26 workmanship of 1 historic bridge from a construction staging area (Appendix 19C, Table 19C-1).
- 27 • **Alternative 2b** would result in the material alteration of setting of 5 built-environment
28 historical resources from the construction of Intake C and from the construction of roadway
29 improvements; the material alteration of setting, design, materials, and workmanship of 5 built-
30 environment historical resources from construction of launch, reception, and maintenance
31 shafts and shaft pads; material alteration of setting, design, materials, and workmanship of 13
32 built-environment historical resources from the construction of roadways and utilities; material
33 alteration of setting, design, materials, and workmanship of 1 built-environment historical
34 resource from construction of other water conveyance features; and the potential material
35 alteration of design, materials, and workmanship of 1 historic bridge from a construction
36 staging area (Appendix 19C, Table 19C-1).
- 37 • **Alternative 2c** would result in the material alteration of setting of 7 built-environment
38 historical resources from the construction of Intakes B and C and from the construction of
39 roadway improvements; the material alteration of setting, design, materials, and workmanship
40 of 5 built-environment historical resources from construction of launch, reception, and

1 maintenance shafts and shaft pads; material alteration of setting, design, materials, and
2 workmanship of 12 built-environment historical resources from the construction of roadways
3 and utilities; material alteration of setting, design, materials, and workmanship of 1 built-
4 environment historical resource from construction of other water conveyance features; and the
5 potential material alteration of design, materials, and workmanship of 1 historic bridge from a
6 construction staging area (Appendix 19C, Table 19C-1).

- 7 • **Alternative 3** would result in the material alteration of setting of 7 built-environment historical
8 resources from the construction of Intakes B and C and from the construction of roadway
9 improvements; the material alteration of setting, design, materials, and workmanship of 2 built-
10 environment historical resources from construction of launch, reception, and maintenance
11 shafts and shaft pads; material alteration of setting, design, materials, and workmanship of 9
12 built-environment historical resources from the construction of roadways and utilities; and
13 material alteration of setting, design, materials, and workmanship of 1 built-environment
14 historical resource from construction of other water conveyance features (Appendix 19C, Table
15 19C-2).

- 16 • **Alternative 4a** would result in the material alteration of setting of 11 built-environment
17 historical resources from the construction of Intakes A, B and C and from the construction of
18 roadway improvements; the material alteration of setting, design, materials, and workmanship
19 of 2 built-environment historical resources from construction of launch, reception, and
20 maintenance shafts and shaft pads; material alteration of setting, design, materials, and
21 workmanship of 5 built-environment historical resources from the construction of roadways
22 and utilities; and material alteration of setting, design, materials, and workmanship of 2 built-
23 environment historical resource from construction of other water conveyance features
24 (Appendix 19C, Table 19C-2).

- 25 • **Alternative 4b** would result in the material alteration of setting of 5 built-environment
26 historical resources from the construction of Intake C and from the construction of roadway
27 improvements; the material alteration of setting, design, materials, and workmanship of 2 built-
28 environment historical resources from construction of launch, reception, and maintenance
29 shafts and shaft pads; material alteration of setting, design, materials, and workmanship of 10
30 built-environment historical resources from the construction of roadways and utilities; and
31 material alteration of setting, design, materials, and workmanship of 1 built-environment
32 historical resource from construction of other water conveyance features (Appendix 19C, Table
33 19C-2).

- 34 • **Alternative 4c** would result in the material alteration of setting of 7 built-environment
35 historical resources from the construction of Intakes B and C and from the construction of
36 roadway improvements; the material alteration of setting, design, materials, and workmanship
37 of 2 built-environment historical resources from construction of launch, reception, and
38 maintenance shafts and shaft pads; material alteration of setting, design, materials, and
39 workmanship of 9 built-environment historical resources from the construction of roadways
40 and utilities; and material alteration of setting, design, materials, and workmanship of 1 built-
41 environment historical resource from construction of other water conveyance features
42 (Appendix 19C, Table 19C-2).

- 43 • **Alternative 5** would result in the material alteration of setting of 7 built-environment historical
44 resources from the construction of Intakes B and C and from the construction of roadway
45 improvements; the material alteration of setting, design, materials, and workmanship of 2 built-

environment historical resources from construction of launch, reception, and maintenance shafts and shaft pads; material alteration of setting, design, materials, and workmanship of 7 built-environment historical resources from the construction of roadways and utilities; and material alteration of setting, design, materials, and workmanship of 1 built-environment historical resource from construction of other water conveyance features (Appendix 19C, Table 19C-3).

- **Field Investigations** would not impact any built-environment historical resources.

Table 19-5 provides a comparison of the types and number of impacts on built-environment historical resources by alternative.

Table 19-5. Comparison of Types and Number of Impacts on Built-Environment Historical Resources by Alternative

Impacts on Built-Environment Resources	Alternative								
	1	2a	2b	2c	3	4a	4b	4c	5
NI	2	1	1	1	0	0	1	0	0
LTS	10	6	11	10	8	4	9	8	6
S	6	8	6	6	5	7	5	5	5
SU	10	13	8	10	6	9	4	6	6

NI = no impact; LTS = less than significant; S = significant; SU = significant and unavoidable.

CEQA Conclusion—All Project Alternatives

A total of 31 eligible built-environment resources have been identified in the AI-BE. Construction of project features may require physical alteration of 9 built-environment historical resources. Construction may also result in changes to the setting of 22 built-environment historical resources. Both material alterations to the integrity of materials, design, or workmanship, as well as material alterations to the integrity of setting, feeling, or association would impact the historical resource by removing character-defining features of the resource or altering the resource's character, resulting in an impairment of the resource's ability to convey its significance. For these reasons this would be a significant impact. Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment Treatment Plan in Consultation with Interested Parties* may mitigate these effects, but cannot guarantee they would be entirely avoided. The scale of the Delta Conveyance Project and the constraints imposed by other environmental resources would make avoidance of all significant impacts unlikely. For these reasons, even with implementation of the following mitigation measure, this impact would be significant and unavoidable.

Mitigation Measure CUL-1: Prepare and Implement a Built-Environment Treatment Plan in Consultation with Interested Parties

- All mitigation will be completed under the oversight of individuals who meet the Secretary of the Interior's professional qualifications and have demonstrable experience conducting the following recommended measures. DWR will perform the following measures as part of mitigation and monitoring for compliance with CEQA.
 - A built-environment treatment plan (BETP) will be prepared for each built-environment historical resource affected by the project. For each BETP prepared, DWR will review

1 mitigation measures from other resource topics in this EIR, such as noise and visual, to
2 identify other mitigation activities related to the historical resources that is the subject
3 of the treatment plan. The BETP will be prepared by an architectural historian with
4 demonstrated experience preparing treatment for similar kinds of resources and
5 reviewed by relevant parties prior to any demolition or ground-disturbing activity with
6 potential to affect a built-environment resource. Property-specific impacts are identified
7 in Appendix 19C, *Impact Analysis of Project Alternatives on Built-Environment Historical*
8 *Resources*, Tables 19C-1 through 19C-4, and mitigation will be implemented in
9 accordance with the specifics developed in the BETP. Resource-specific BETPs will
10 reduce project impacts by tailoring avoidance and minimization treatments to each
11 resource.

- 12 b. DWR will consult with relevant parties during preparation of the BETPs. Such parties
13 may include but are not limited to the State Historic Preservation Officer, the Advisory
14 Council on Historic Preservation, local historical societies, and other interested parties
15 such as local preservation and community organizations with a demonstrated interest
16 in the resource that is the subject of the BETP. Consulting with relevant parties will
17 reduce the impact of the project by helping to ensure that relevant parties' concerns
18 regarding the resource's integrity are factored in to the BETP.
- 19 c. The following treatments may be appropriate for inclusion in the BETPs for built-
20 environment historical resources that are in close proximity to the project but that are
21 not anticipated to be directly affected by demolition or construction but which may be
22 subject to direct effects such as vibration or inadvertent damage activities. These
23 treatments will reduce project impacts by developing a clear plan to stabilize resources,
24 resulting in avoidance or minimization of potential impacts on the resource's integrity
25 of design, materials, or workmanship. Furthermore, these treatments will help avoid
26 damage to built-environment historical resources. These treatments also provide
27 guidance on conducting repairs when inadvertent damage occurs to built-environment
28 historical resources. These treatments are designed to avoid direct effects such as
29 vibration that may result in structural damage or other physical damage.
- 30 i. Historic Structure Reports will be prepared for built-environment historical
31 resources adjacent to the project for which detailed information is required to
32 develop protection measures (National Park Service 2005a). These will be done
33 for buildings and structures that appear to be in poor condition and are adjacent
34 to construction, therefore, potentially sensitive to construction-related activities
35 such as vibration. Preconstruction stabilization of these buildings may be
36 necessary. The Historic Structure Report will also outline a treatment plan, based
37 on the Secretary of the Interior's Standards¹, should the historical resource
38 sustain unanticipated damage (National Park Service n.d.).
- 39 ii. Preconstruction condition assessments will be prepared for built-environment
40 historical resources adjacent to the project that are stable but could be
41 unintentionally damaged during construction. The preconstruction survey will
42 include an evaluation of potential construction vibration to ensure that it will not
43 reach levels to damage historical resources. Should there be any question as to

¹The Secretary of the Interior's Standards for the Treatment of Historic Properties are available at <https://www.nps.gov/tps/standards.htm> (National Park Service n.d.)

- 1 whether or not the project caused damage, these condition assessments will
2 provide confirmation of the preconstruction condition. As part of this
3 preconstruction condition assessment, a stabilization plan will be prepared for the
4 historical resource based on National Park Service guidance on stabilizing historic
5 buildings (National Park Service 1993).²
- 6 iii. Precautions to protect built-environment historical resources from construction
7 vehicles, debris, and dust may include fencing or debris meshing. Temporary
8 mothballing and fire and intrusion protection may be needed if the buildings are
9 unoccupied during construction (National Park Service 1993).
- 10 iv. Protective treatments will be field checked as needed during construction by a
11 qualified architectural historian with demonstrated experience conducting
12 monitoring of this nature. Vibration monitoring will be required for buildings
13 determined to be susceptible to vibration damage that are in close proximity to
14 construction activities or machinery that cause vibrations in exceedance of a
15 single-event source vibration generating a PPV in inches per second of 0.3 PPV, or
16 when a continuous source causes vibration at 0.12 PPV.
- 17 v. Redesign of relevant facilities will be used to avoid destruction or damage to a
18 built-environment historical resource or its setting, where feasible, taking into
19 account costs, logistics, and technological and environmental considerations of
20 potential indirect significant impacts on other resources, to the extent where the
21 design changes are consistent with the objectives of the project.
- 22 d. For built resources that will be directly and adversely affected, the BETP will specify
23 resource-specific treatments such as, but not limited to, the following treatments for
24 minimization or compensation for effects on built-environment resources. These
25 treatments will reduce project impacts by ensuring that new project features, to the
26 extent feasible, are designed in a manner consistent with setting, to retain the resource's
27 integrity of setting, feeling, and association. As an effort to mitigate damage to or
28 destruction of a built-environment historical resource, documentation and recordation
29 of the resources will mitigate the loss by preserving the history of the resource and its
30 role within the region's history for the public's benefit and understanding. Where
31 damage will occur to built-environment historical resources, the damage will be
32 mitigated by repairing damage in accordance with the Secretary of the Interior's
33 Standards.
- 34 i. Design standards consistent with the Secretary of the Interior's Standards to
35 minimize visual impacts and to ensure context-appropriate design. This can
36 include screening features, plantings, or other design changes that can minimize
37 impacts.
- 38 ii. Historic American Building Survey (HABS) documentation will be prepared for
39 CRHR- and NRHP-eligible buildings and structures that will be demolished or
40 altered. These reports will include written and photographic documentation of
41 the significant and character-defining features of these properties. These reports

² This guidance can be found in *Preservation Brief 31: Mothballing Historic Buildings* and is available at <https://www.nps.gov/tps/how-to-preserve/briefs/31-mothballing.htm#stable>

- 1 will minimize the adverse impacts by capturing and preserving a description of
2 the significant information and characteristics associated with the resource.
- 3 iii. As applicable, Historic American Landscape Survey (HALS) records and Historic
4 American Engineering Record (HAER) documents will be prepared for historic
5 water-associated resources (National Park Service 2005b). The levees and other
6 linear CRHR- and NRHP-eligible features will be recorded following HAER
7 guidelines. Additionally, the settings will be recorded following HALS guidelines.
8 These reports will include written and photographic documentation of the
9 significant and character-defining features of these properties. The HALS and
10 HAER reports will minimize the significant impacts by capturing and retaining a
11 description of the significant engineering and design information associated with
12 the resource.
- 13 iv. In recent years, the National Park Service and National Archives have issued
14 directives indicating that they will not accept formal submissions under the HABS,
15 HALS, and HAER programs unless the resource being documented is a rare,
16 unusual, or exceptionally high-quality example of its type, due to the huge volume
17 of submissions generated by environmental mitigation requirements. Therefore,
18 the BETP will indicate whether the documentation will be formally submitted to
19 the National Park Service for review and approval, based on a consideration of the
20 rarity or caliber of the resource being mitigated, or instead will be prepared
21 informally for distribution to local repositories or for re-use for interpretive or
22 educational programs.
- 23 v. As applicable for rural cultural landscape historic districts, prepare a Landscape
24 Treatment Plan. The Landscape Treatment Plan will follow guidance published by
25 the National Park Service (1998) and will serve to document the history and
26 significance of the landscape and provide treatment recommendations that
27 conform with the Secretary of the Interior's Standards.
- 28 vi. Preparation of interpretive or educational media such as displays in public spaces,
29 print materials, or websites. Interpretive and educational media may incorporate
30 written, photographic, and archival documentation (such as those compiled for
31 informal HABS/HAER/HALS reports), oral history interviews, video, or animation
32 to tell the story of the heritage represented by the affected resource. Interpretive
33 media is an appropriate mitigation for resources that are CRHR- or NRHP-eligible
34 because they are associated with events that have made a significant contribution
35 to the broad patterns of California's history and cultural heritage or that are
36 associated with persons important in our past for their association with historical
37 trends or people, rather than for their design qualities.
- 38 vii. Salvage of materials will be performed to the extent feasible to enable the
39 restoration of similar buildings or structures outside of the area of direct impact.
40 Salvage will further minimize significant impacts by using salvaged materials to
41 ensure that similar resources are restored and maintained in a manner that will
42 ensure the significance of the resource is preserved.
- 43 viii. Relocation of historic buildings that would otherwise be demolished.

- 1 ix. Following the Secretary of the Interior’s Standards to restore built resources
2 outside of the area of direct effect that are of the same type as resources that will
3 be demolished by the Delta Conveyance Project.
- 4 x. Other appropriate treatment methods that are identified in relation to particular
5 resources that are affected.

6 **Mitigation Impacts**

7 Compensatory Mitigation

8 Although the Compensatory Mitigation Plan described in Appendix 3F, *Compensatory Mitigation*
9 *Plan for Special-Status Species and Aquatic Resources*, does not act as mitigation for impacts on
10 cultural resources from project construction or operations, its implementation could result in
11 impacts on cultural resources.

12 The project includes compensatory mitigation that involves the creation of habitat restoration areas.
13 The three ponds along I-5 would have no impacts on built-environment historical resources.
14 Construction of the compensatory mitigation areas on Bouldin Island has the potential to cause a
15 less-than-significant impact on the Bouldin Island Rural Cultural Landscape District by altering
16 character-defining features such as the existing ditches and canals on the island (Table 19-6, and
17 Appendix 19C, Table 19C-4), and combined with project alternatives would not change the overall
18 impact conclusion.

19 As described in Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic*
20 *Resources*, the project includes a programmatic approach to identify and construct mitigation sites
21 for channel margin and tidal wetland habitats within the North Delta Arc. Opportunities for habitat
22 restoration in the Delta are constrained by the elevation of land, which determines the potential to
23 reestablish land-water connections that sustain wetland and floodplain habitat. Activities such as
24 restoring wetlands and altering existing levees, if within the boundary of historical resources, could
25 cause impacts on historical resources. Because the location of the channel margin and tidal habitat
26 restoration has not yet been identified, it is not known whether built-environment historical
27 resources would be present. Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment*
28 *Treatment Plan in Consultation with Interested Parties* would be implemented to mitigate effects on
29 resources if they are present in the restoration areas, but, as with construction of the project,
30 implementation of this mitigation measure cannot guarantee resources would be entirely avoided.
31 Therefore, the project alternatives combined with compensatory mitigation would not change the
32 overall impact conclusion of significant and unavoidable.

33 **Table 19-6. Comparison of Types and Number of Impacts on Built-Environment Historical**
34 **Resources by Compensatory Mitigation Areas**

Impacts on Built-Environment Resources	Compensatory Mitigation Area		
	I-5 Ponds 7 and 8	I-5 Pond 5	Bouldin Island
NI	0	0	0
LTS	0	0	3
S	0	0	1
SU	0	0	0

35 NI = no impact; LTS = less than significant; S = significant; SU = significant and unavoidable.

1 Other Mitigation Measures

2 Some mitigation measures would involve the use of heavy equipment such as graders, excavators,
3 dozers, and haul trucks that would have the potential to result in impacts on eligible built-
4 environment historical resources. The mitigation measures with potential to result in impacts on
5 historical resource are: Mitigation Measures BIO-2c: *Electrical Power Line Support Placement*, AG-3:
6 *Replacement or Relocation of Affected Infrastructure Supporting Agricultural Properties*, AES-1c:
7 *Implement Best Management Practices to Implement Project Landscaping Plan*, and AQ-9: *Develop*
8 *and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP*
9 *Operational Pumping to Net Zero*.

10 Permanent impacts on eligible built-environment historical resources resulting from the
11 replacement or relocation of infrastructure could contribute to historical resource impacts by
12 causing a material alteration to a resource's integrity resulting in a significant impact.
13 Implementation of Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment*
14 *Treatment Plan in Consultation with Interested Parties* requires resource-specific treatments to
15 minimize effects on built-environment resources to a less-than-substantial level.

16 Temporary impacts on eligible built-environment historical resources resulting from
17 implementation of mitigation measures would be similar to construction effects of the project
18 alternatives in certain construction areas and would contribute to historical resource impacts from
19 the project alternatives. Depending on the construction techniques used in the vicinity of resources,
20 damage to historical resources from implementation of mitigation measures and associated
21 construction vibration would occur if vibration exceeds 0.12 PPV. Because temporary work areas
22 are planned within the boundaries of historical resources, those resources could sustain damage as
23 a result of construction activities associated with implementation of mitigation measures, and the
24 resource's integrity of design, materials, and workmanship could be materially altered, causing a
25 significant impact. Implementation of Mitigation Measure CUL-1: *Prepare and Implement a Built-*
26 *Environment Treatment Plan in Consultation with Interested Parties* requires vibration monitoring
27 for buildings determined to be susceptible to vibration damage that are in close proximity to
28 construction activities or machinery that cause excessive vibrations, reducing the impact to a less-
29 than-significant level. Some mitigation measures would result in the permanent material alteration
30 of settings of built-environment historical resources, while other impacts would be temporary.
31 Therefore, implementation of other mitigation measures would affect eligible built-environment
32 historical resources and the impact on historical resources would be substantial.

33 Overall, the impacts on eligible built-environment historical resources from construction of
34 compensatory mitigation and implementation of other mitigation measures, combined with project
35 alternatives, would not change the significant and unavoidable impact conclusion.

36 **Impact CUL-2: Impacts on Unidentified and Unevaluated Built-Environment Historical** 37 **Resources Resulting from Construction and Operation of the Project**

38 Because DWR does not have legal access to the majority of the study area for all of the project
39 alternatives, inventory efforts in the entire study area have not been completed. Nonetheless, the
40 intensity of activity in the Delta region during the historic era and a review of available data such as
41 aerial photographs suggest that numerous additional built-environment historical resources occur
42 in the study area that have not been identified or which cannot currently be accessed and evaluated.

1 Review of available data such as aerial photographs, historical topographic maps, and assessors'
2 records also indicates that many of these inaccessible properties are 45 years of age or older and
3 have the potential to be historical resources. Based on the desktop review and field survey
4 described in Appendix 19A, at least 88 unevaluated built-environment historical resources have
5 been identified in the study area of the Delta Conveyance Project. Many of these resources are likely
6 to be significant because they may be associated with the important historical themes described the
7 *Research Design and Context Statement* (ICF 2019:3-1-3-56). In addition, such resources may be
8 associated with historically significant persons, events, or may represent significant artistic values.
9 Thus, the resources may have significance under both CEQA (CEQA Guidelines § 15064.5(a)(3)) and
10 the NRHP (30 CFR § 60.4). In addition, because many of the historic-era structures in the Delta
11 region are intact, and retain their rural agricultural setting, many of these resources are likely to
12 have integrity according to the definitions of CEQA and the NRHP (14 Cal. Code Regs. § 4852(c), 30
13 CFR § 60.4). Because many unidentified and unevaluated resources are likely to have significance
14 and integrity, they may qualify as historical resources under CEQA.

15 ***All Project Alternatives***

16 Construction of all of the project alternatives may result in demolition, damage, or other impacts
17 such as changes to the setting. While mitigation measures may mitigate these impacts, they would
18 not completely avoid them because mitigation cannot guarantee that material alteration to built-
19 environment historical resources would be avoided in all cases and that material alterations to
20 integrity of feeling, setting, or association would not occur.

21 ***CEQA Conclusion—All Project Alternatives***

22 The AI-BE is sensitive for built-environment resources that have not yet been recorded and
23 evaluated because the majority of the area is legally inaccessible. Inventory efforts have not
24 gathered complete information in these inaccessible areas. Many of these resources are likely to be
25 associated with important historical themes or persons, or possess high creative values; therefore,
26 they are likely to have significance under CRHR and NRHP criteria. Because many of these resources
27 remain intact and retain their rural agricultural setting, they are also likely to retain their historical
28 integrity. Therefore, many are likely to qualify as historic properties or historical resources under
29 the NHPA and CEQA, respectively. Construction of project facilities may require the alteration of
30 built-environment historical resources. Construction may also result in material alterations to the
31 integrity of feeling, setting, or association. Changes to the setting would be material alterations
32 because they would either remove the resource or alter the resource's character, resulting in a
33 diminishment of the resource's ability to convey its significance. For these reasons this would be a
34 significant impact. Mitigation Measure CUL-2: *Conduct a Survey of Inaccessible Properties to Assess*
35 *Eligibility, Determine if These Properties Will Be Adversely Affected by the Project, and Develop*
36 *Treatment to Resolve or Mitigate Adverse Impacts* may mitigate these impacts, but cannot guarantee
37 they would be entirely avoided. The scale of the Delta Conveyance Project and the constraints
38 imposed by other environmental resources make avoidance of all significant impacts unlikely. For
39 these reasons, even with implementation of the following mitigation measure, this impact would be
40 significant and unavoidable.

1 **Mitigation Measure CUL-2: Conduct a Survey of Inaccessible Properties to Assess**
2 **Eligibility, Determine if These Properties Will Be Adversely Affected by the Project, and**
3 **Develop Treatment to Resolve or Mitigate Adverse Impacts**

- 4 1. Because DWR does not have legal access to the majority of the project footprint, a built
5 resources inventory has not been completed for the entire project footprint. Before
6 construction, DWR will have access to all property needed for an inventory and evaluation
7 report, and DWR will ensure that all areas of impacts will be surveyed. This subsequent
8 survey will be conducted in a manner consistent with the 2021 survey (Appendix 19A,
9 *Historical Resources Survey and Evaluation Report*). The project impacts will be minimized
10 with this measure by ensuring that built-environment historical resources have been
11 identified, so Mitigation Measure CUL-1 can be applied.
- 12 a. The scope of the inventory will include the entire area where impacts may occur that
13 were inaccessible or partially inaccessible in the first survey efforts. Such impacts
14 consist of direct disturbance, damage through vibration, or changes to the setting.
- 15 b. The work will be led or supervised by architectural historians that meet the Secretary of
16 the Department of the Interior's professional qualification standards provided in 36 CFR
17 Part 61.
- 18 c. Inventory methods and evaluation will include pedestrian surveys, photographic
19 documentation, historical research using both primary and secondary sources, and
20 interviews and oral histories.
- 21 d. Newly identified resources will be mapped and described on applicable California
22 Department of Parks and Recreation (DPR) 523-series forms. Mapping will be
23 performed by recording data points with GPS hardware that can be imported and
24 managed digitally.
- 25 e. For all identified resources, DWR will evaluate the resources to determine if they are
26 any of the following:
- 27 i. Historical resources (CEQA Guidelines § 15064.5(a))
- 28 ii. Historic properties (36 CFR § 60.4)
- 29 f. The recorded resources and the resource evaluations will be summarized in an
30 inventory report. The inventory report will include a determination of whether
31 individual resources qualifying as historical resources or historic properties will be
32 subject to significant impacts. DWR will make such a finding if the project will result in
33 the following:
- 34 i. Demolish or materially alter the qualities that make the resource eligible for
35 listing in the CRHR (CEQA Guidelines § 15064.5(b)(2)(A),(C)).
- 36 ii. Demolish or materially alter the qualities that justify the inclusion of the resource
37 on a local register or its identification in an historical resources survey meeting
38 the requirements of California Public Resources Code Section 5024.1(g), unless
39 DWR establishes by a preponderance of evidence that the resource is not
40 historically or culturally significant (CEQA Guidelines § 15064.5(b)(2)(B)).
- 41 iii. Alter, directly or indirectly, the qualities that make a resource eligible for listing in
42 the NRHP (36 CFR § 800.5(a)(1)).

- 1 g. Where built-environment historical resources that are listed or qualify for listing in the
2 CRHR or NRHP, or that have been designated in a qualified local register, will be subject
3 to significant impacts, these resources will be added to the BETP prepared in
4 accordance with Mitigation Measure CUL-1.

5 ***Mitigation Impacts***

6 *Compensatory Mitigation*

7 Although the Compensatory Mitigation Plan described in Appendix 3F does not act as mitigation for
8 impacts on cultural resources from project construction or operations, its implementation could
9 result in impacts on cultural resources.

10 The project includes compensatory mitigation that involves the creation of habitat restoration areas.
11 Based on fieldwork and an analysis of historic aerial photographs as part of the *Historical Resources*
12 *Survey and Evaluation Report* (Appendix 19A) prepared for the project, no extant unidentified built-
13 environment historical resources are anticipated to be affected by the compensatory mitigation
14 areas. Combined with project alternatives there would be no change in the overall impact
15 conclusion.

16 As described in Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic*
17 *Resources*, the project includes a programmatic approach to identify and construct mitigation sites
18 for channel margin and tidal wetland habitats within the North Delta Arc. Opportunities for habitat
19 restoration in the Delta are constrained by the elevation of land, which determines the potential to
20 reestablish land-water connections that sustain wetland and floodplain habitat. Activities such as
21 restoring wetlands and altering existing levees, if within the boundary of historical resources, could
22 cause impacts on historical resources. Because the location of the channel margin and tidal habitat
23 restoration has not yet been identified, it is not known whether built-environment historical
24 resources would be present. Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment*
25 *Treatment Plan in Consultation with Interested Parties* would be implemented to mitigate effects on
26 resources if they are present in the restoration areas, but, as with construction of the project,
27 implementation of this mitigation measure cannot guarantee resources would be entirely avoided.
28 Therefore, the project alternatives combined with compensatory mitigation would not change the
29 overall impact conclusion of significant and unavoidable.

30 *Other Mitigation Measures*

31 Some mitigation measures would involve the use of heavy equipment such as graders, excavators,
32 dozers, and haul trucks that would have the potential to result in impacts on unidentified and
33 unevaluated built-environment historical resources. The mitigation measures with potential to
34 result in impacts on historical resource are: Mitigation Measures BIO-2c: *Electrical Power Line*
35 *Support Placement*, AG-3: *Replacement or Relocation of Affected Infrastructure Supporting*
36 *Agricultural Properties*, AES-1c: *Implement Best Management Practices to Implement Project*
37 *Landscaping Plan*, and AQ-9: *Develop and Implement a GHG Reduction Plan to Reduce GHG Emissions*
38 *from Construction and Net CVP Operational Pumping to Net Zero*.

39 Permanent impacts on unidentified and unevaluated built-environment historical resources
40 resulting from the replacement or relocation of infrastructure would contribute to historical
41 resource impacts by causing a material alteration to a resource's integrity resulting in a significant
42 impact. Implementation of Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment*

1 *Treatment Plan in Consultation with Interested Parties* requires resource-specific treatments to
2 minimize effects on built-environment resources to a less-than-substantial level.

3 Temporary impacts on unidentified and unevaluated built-environment historical resources
4 resulting from implementation of mitigation measures would be similar to construction effects of
5 the project alternatives in certain construction areas and would contribute to historical resource
6 impacts of the project alternatives. Depending on the construction techniques used in the vicinity of
7 resources, damage to historical resources from implementation of mitigation measures and
8 associated construction vibration would occur if vibration exceeds 0.12 PPV. Because temporary
9 work areas are planned within the boundaries of historical resources, those resources could sustain
10 damage as a result of construction activities associated with implementation of mitigation measures,
11 and the resource's integrity of design, materials, and workmanship could be materially altered,
12 causing a significant impact. Implementation of mitigation measures may result in demolition,
13 damage, or other impacts on historical resources such as changes to the setting. Implementation of
14 Mitigation Measure CUL-2: *Conduct a Survey of Inaccessible Properties to Assess Eligibility, Determine*
15 *if These Properties Will Be Adversely Affected by the Project, and Develop Treatment to Resolve or*
16 *Mitigate Adverse Impacts* and Mitigation Measure CUL-1: *Prepare and Implement a Built-Environment*
17 *Treatment Plan in Consultation with Interested Parties* may mitigate these impacts, but cannot
18 guarantee they would be entirely avoided. Implementation of mitigation measures may result in
19 material alteration of built-environment historical resources. Therefore, implementation of other
20 mitigation measures may affect unidentified and unevaluated built-environment historical
21 resources and the impact on historical resources would be substantial.

22 Overall, the impacts on unidentified and unevaluated built-environment historical resources from
23 construction of compensatory mitigation and implementation of other mitigation measures,
24 combined with project alternatives, would not change the significant and unavoidable impact
25 conclusion.

26 **Impact CUL-3: Impacts on Identified Archaeological Resources Resulting from the Project**

27 Records searches at the CHRIS have identified 34 previously recorded archaeological resources
28 within the AI-A for all of the project alternatives. Of the 34 resources, 10 are early Native American
29 resources and 24 are post-contact resources. Three of the 34 resources have been determined to be
30 historical resources under CEQA, while the other 31 have not been evaluated. Each of the project
31 activities listed above have the potential to affect archaeological resources. The specific construction
32 activity that would cause an impact on each archaeological resource is summarized in Appendix
33 19D, *Impact Analysis of Project Alternatives on Archaeological Resources*.

34 The exact location of these resources cannot be disclosed because such disclosure might lead to
35 damage of the resources (Section 19.2.1, *Confidentiality Considerations*). However, these resources
36 occur within the footprint of both temporary work areas and permanent surface impacts. Much of
37 the data potential in archaeological resources exists in the spatial associations of different artifacts
38 and other cultural material. Where artifacts that have known associations with particular time
39 periods occur adjacent to other material such as faunal bone or plant remains from subsistence
40 activity, the proximity of the materials allows an inference as to the age of the subsistence remains,
41 thereby allowing researchers to infer particular subsistence strategies during different early Native
42 American periods. Intrusive ground-disturbing construction, vibration, and other physical
43 disturbance may disrupt these associations and thus disrupt the qualities by which the resources
44 may qualify as historical resources or historic properties. Indirect effects such as introduction of

1 changes to the setting associated with construction of new features or creation of new sources of
2 noise (also a change to the setting) may diminish the basis for the significance of these resources.
3 For these reasons, construction has the potential to materially impair these resources under CEQA.

4 ***All Project Alternatives***

5 All of the project alternatives have the potential to affect identified archaeological resources. Each
6 project alternative would have a different magnitude of impact, which is summarized in Appendix
7 19D and narratively described in this section. Mitigation Measure CUL-3a: *Prepare and Implement an*
8 *Archaeological Resources Management Plan*, Mitigation Measure CUL-3b: *Conduct Cultural Resources*
9 *Sensitivity Training*, and Mitigation Measure CUL-3c: *Implement Archaeological Protocols for Field*
10 *Investigations* would mitigate this impact by training personnel and recovering scientifically
11 important material prior to construction.

- 12 • **Alternative 1** would materially impair 25 identified archaeological resources from the
13 construction of Intake B, modification of levees on Bouldin Island, and construction of roadways,
14 railroads, and utilities.
- 15 • **Alternative 2a** would materially impair 26 identified archaeological resources from the
16 construction of Intakes A and B, modification of levees on Bouldin Island, and construction of
17 roadways, railroads, and utilities.
- 18 • **Alternative 2b** would materially impair 22 identified archaeological resources from the
19 modification of levees on Bouldin Island and construction of roadways, railroads, and utilities.
- 20 • **Alternative 2c** would materially impair 23 identified archaeological resources from the
21 construction of Intake B, modification of levees on Bouldin Island, and construction of
22 roadways, railroads, and utilities.
- 23 • **Alternative 3** would materially impair 15 identified archaeological resources from the
24 construction of Intake B, modification of levees on Lower Roberts Island, and construction of
25 roadways, railroads, and utilities.
- 26 • **Alternative 4a** would materially impair 17 identified archaeological resources from the
27 construction of Intakes A and B, modification of levees on Lower Roberts Island, and
28 construction of roadways, railroads, and utilities.
- 29 • **Alternative 4b** would materially impair 13 identified archaeological resources from the
30 modification of levees on Lower Roberts Island and construction of roadways, railroads, and
31 utilities.
- 32 • **Alternative 4c** would materially impair 15 identified archaeological resources from the
33 construction of Intake B, modification of levees on Lower Roberts Island, and construction of
34 roadways, railroads, and utilities.
- 35 • **Alternative 5** would materially impair 8 identified archaeological resources from the
36 construction of Intake B, modification of levees at Lower Roberts Island, and construction of
37 roadways, and utilities.
- 38 • **Field Investigations** would materially impair 7 identified archaeological resources from
39 geotechnical investigations including geotechnical, hydrogeological, agronomic, and
40 construction test projects along the tunnel alignment and trenching associated with the West
41 Tracy Fault study.

1 **CEQA Conclusion—All Project Alternatives**

2 Field investigations and construction of conveyance facilities would affect identified archaeological
3 resources that occur in the footprint of project alternatives. This impact would be significant
4 because construction would materially alter or destroy the spatial associations between these
5 resources and their archaeological data, which has the potential to yield information useful in
6 archaeological research and is the basis for the significance of these resources. Identified but
7 currently inaccessible resources may also be significant under other CRHR criteria. Mitigation
8 Measure CUL-3a: *Prepare and Implement an Archaeological Resources Management Plan*, Mitigation
9 Measure CUL-3b: *Conduct Cultural Resources Sensitivity Training*, and Mitigation Measure CUL-3c:
10 *Implement Archaeological Protocols for Field Investigations* would mitigate this impact by training
11 personnel and recovering scientifically important material prior to construction through the
12 sensitive area, but would not guarantee that all of the scientifically consequential information would
13 be retrieved because feasible archaeological excavation typically only retrieves a sample of the
14 deposit, and portions of the site with consequential information may remain after treatment.
15 Construction could damage these remaining portions of the deposit. Therefore, even with mitigation,
16 this impact would be significant and unavoidable.

17 **Mitigation Measure CUL-3a: Prepare and Implement an Archaeological Resources** 18 **Management Plan**

- 19 1. DWR will prepare an Archaeological Resources Management Plan (ARMP) prior to field
20 investigations and construction activities to guide the archaeological resources technical
21 studies and resource-specific treatments to be conducted prior to and during construction
22 activities. The ARMP will describe procedures that have been identified for avoiding,
23 minimizing, and mitigating known or potential project impacts on archaeological resources.
24 The first step in each procedure will be to implement feasible avoidance of archaeological
25 resources, if possible.
- 26 a. The ARMP will be developed during the permitting and design process and will be
27 adopted prior to land acquisition. Preparers of the ARMP will meet professional
28 qualification standards established in the Secretary of the Interior's Professional
29 Qualification Standards for archaeology and architectural history. DWR will coordinate
30 with the Native American Tribes that participated in consultation on the project to
31 ascertain whether they have standard procedures that may be applicable or other input
32 on the content of the ARMP. The Tribes will be afforded an opportunity to review and
33 comment on the draft ARMP. The content of the ARMP will follow industry standards,
34 including guidance prepared by the California Office of Historic Preservation and the
35 National Park Service. Each procedure will be attached to the ARMP, as each is
36 completed in accordance with the timing and responsibilities identified below.
- 37 b. The ARMP will include procedures for the following:
- 38 i. Archaeological Resources Phased Identification
- 39 ii. Archaeological Treatment
- 40 iii. Post-Review Discovery
- 41 iv. Archaeological Monitoring

Archaeological Resources Phased Identification Procedure (PIP)

- 1
- 2 c. Purpose: DWR, or its qualified contractors, will conduct pedestrian and subsurface
- 3 surveys to complete the identification of archaeological resources located in the ADI-A.
- 4 The PIP will provide details about the current cultural resources data gaps and
- 5 requirements for completing phased identification surveys prior to construction for
- 6 areas where DWR currently does not have access. Once these surveys are conducted and
- 7 DWR has information about specific resources, DWR will be able to assess resource-
- 8 specific project impacts and consider avoidance options and the applicability of other
- 9 procedures in the ARMP, such as treatment plans or monitoring.
- 10 d. Outcome: Implementing the PIP will ensure that DWR fills the current data gaps for
- 11 archaeological resources and is fully aware of the presence of archaeological resources
- 12 that may be affected by the project. As part of the reporting requirements when
- 13 implementing the PIP, the survey and evaluation reports will recommend further
- 14 procedures required to avoid, minimize, or mitigate project impacts on those resources
- 15 found to be significant that are not currently known due to limited access.
- 16 e. Content: The PIP will include guidance for phased surveys and CRHR evaluations for
- 17 archaeological resources and assessment of impacts, should any resources be newly
- 18 identified. The PIP will specify the ways in which surveys might be phased, taking into
- 19 consideration the mechanisms for acquiring access to currently inaccessible properties
- 20 and the schedule for design development.

Archaeological Treatment Procedure

- 21
- 22 f. Purpose: DWR, or its qualified contractors, will prepare a procedure that provides a
- 23 range of treatment options for archaeological resources identified as part of
- 24 implementing the PIP or previously identified as NRHP/CRHR eligible.
- 25 g. Outcome: The Archaeological Treatment Procedure will ensure that all archaeological
- 26 resources potentially affected by the project will be treated according to best practices
- 27 and professional standards, and that treatment options will include a range of
- 28 interventions from avoidance and minimization of impacts to mitigation for the loss of
- 29 the physical resource.
- 30 h. Content: The Archaeological Treatment Procedure will provide detailed guidance on the
- 31 professional standards and best practices for a range of treatment types for avoiding
- 32 and minimizing impacts on archaeological resources, as well as other treatments for
- 33 how to record the significance of an archaeological resource when impacts cannot be
- 34 avoided or minimized. This procedure will identify when it is appropriate to prepare a
- 35 resource-specific treatment plan and establish the minimum contents and standards for
- 36 such plans.

Post-Review Discovery Procedure

- 37
- 38 i. Purpose: DWR, or its qualified contractors, will prepare a procedure that identifies the
- 39 critical path actions that must be followed if an unanticipated discovery of cultural
- 40 materials occurs at any time during project construction, operations, or maintenance.
- 41 j. Outcome: The Post-Review Discovery Procedure will ensure that any archaeological
- 42 resources that are disturbed in the course of project construction, operations, or

1 maintenance will be assessed by qualified archaeologists prior to further ground-
2 disturbing activities, and that treatment options for the avoidance, minimization, or
3 mitigation of further disturbance are developed and applied prior to resumption of
4 construction activity.

- 5 k. Content: The Post-Review Discovery Procedure will specify the steps required for
6 stopping work, assessing the find, coordinating with appropriate agencies or interested
7 parties, developing appropriate treatment, and determining when construction or other
8 activities can continue in the vicinity of any unanticipated discoveries of archaeological
9 resources. This procedure will include a research design and guidance for evaluation
10 and treatment of post-review archaeological discoveries.

11 ***Archaeological Monitoring Procedure***

- 12 l. Purpose: DWR, or its qualified contractors, will prepare a procedure for archaeological
13 monitoring that will be performed during project-related ground disturbance.
- 14 m. Outcome: The Archaeological Monitoring Procedure will ensure that qualified staff
15 perform monitoring during project-related ground disturbance to identify any
16 unanticipated discoveries and to implement the Post-Review Discovery Procedure.
- 17 n. Content: The Archaeological Monitoring Procedure will establish the methods and
18 standards for when and how archaeological monitoring activities will be conducted,
19 identify the roles and responsibilities of monitors and construction crews, and specify
20 communication protocols and reporting requirements. This procedure will address
21 monitoring required during project-related ground disturbance.

22 **Mitigation Measure CUL-3b: Conduct Cultural Resources Sensitivity Training**

- 23 1. Prior to the start of ground disturbance, DWR will ensure that a qualified archaeologist
24 conducts a mandatory archaeological sensitivity training for all personnel involved in
25 ground-disturbing work about cultural resources sensitivity in the project footprint and
26 cultural resources that could be encountered during work. Participants will be required to
27 sign a form stating that they have received and understand the training. DWR will maintain
28 the record of training and make it available to interested parties, upon request. The project
29 foreman will ensure that the new personnel brought onto the project receive the mandatory
30 training before starting work.

31 **Mitigation Measure CUL-3c: Implement Archaeological Protocols for Field Investigations**

- 32 1. All areas associated with field investigations will be reviewed by a qualified archaeologist to
33 evaluate the potential for impacts, if any, on cultural resources. DWR will also implement the
34 following protocols:
- 35 a. Locations that have no previous survey coverage must be surveyed by, or under the
36 direct supervision of, a qualified archaeologist prior to the start of any ground-
37 disturbing activities.
- 38 b. If the archaeologist observes cultural resources within the field investigation area or
39 associated resource buffer as identified by a qualified archaeologist, the location will be
40 shifted the minimum distance necessary to reduce the potential for significant cultural
41 resource impacts without significantly increasing potential impacts on other resources.

- 1 c. If a suitable location cannot be determined within adjacent areas, then the soil
2 investigation at that location will not be conducted. If relocation or termination are not
3 feasible, field investigations will not be conducted until Mitigation Measure CUL-3a has
4 been completed.
- 5 i. Should any unexpected cultural resources be exposed during field investigations,
6 all work will immediately stop in the immediate vicinity (e.g., within 100 feet [30
7 meters]) of the find until it can be evaluated by a qualified archaeologist and an
8 appropriate plan of action can be determined.

9 ***Mitigation Impacts***

10 *Compensatory Mitigation*

11 Although the Compensatory Mitigation Plan described in Appendix 3F does not act as mitigation for
12 impacts on cultural resources from project construction or operations, its implementation could
13 result in impacts on cultural resources.

14 As described in Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic*
15 *Resources*, the project includes compensatory mitigation that involves the creation of habitat
16 restoration areas. The construction of the compensatory mitigation on Bouldin Island has the
17 potential to cause impacts on 13 identified archaeological resources. Mitigation Measure CUL-3a:
18 *Prepare and Implement an Archaeological Resources Management Plan* would mitigate this impact by
19 recovering scientifically important material prior to construction through the sensitive area but
20 would not guarantee that all of the scientifically consequential information would be retrieved
21 because feasible archaeological excavation only typically retrieves a sample of the deposit, and
22 portions of the site with consequential information may remain after treatment. Construction of
23 compensatory mitigation areas could damage these remaining portions of the deposit. Channel
24 margin and tidal restoration areas in the North Delta Arc are not known at this time but may also
25 contain archaeological resources. Mitigation Measure CUL-3a: *Prepare and Implement an*
26 *Archaeological Resources Management Plan* would mitigate this impact by identifying whether
27 resources are present once the restoration areas are known and, if resources are present, would
28 ensure that DWR identify and implement archaeological treatments for avoidance, minimization, or
29 mitigation of impacts. Therefore, even with mitigation, this impact would be significant and
30 unavoidable because resource locations and extents are unknown, and project alternatives
31 combined with compensatory mitigation would not change the overall impact conclusion of
32 significant and unavoidable.

33 *Other Mitigation Measures*

34 Some mitigation measures would involve the use of heavy equipment such as graders, excavators,
35 dozers, and haul trucks that would have the potential to result in impacts on identified
36 archaeological resources. The mitigation measures with potential to result in impacts on historical
37 resources are: Mitigation Measures BIO-2c: *Electrical Power Line Support Placement*; AG-3:
38 *Replacement or Relocation of Affected Infrastructure Supporting Agricultural Properties*; AES-1c:
39 *Implement Best Management Practices to Implement Project Landscaping Plan*, and AQ-9: *Develop*
40 *and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP*
41 *Operational Pumping to Net Zero*. Temporary impacts on identified archaeological resources
42 resulting from implementation of mitigation measures would be similar to construction effects of
43 the project alternatives in certain construction areas and would contribute to archaeological

1 resource impacts of the project alternatives. Implementation of mitigation measures would affect
2 identified archaeological resources that occur in the footprint of project alternatives. This impact
3 would be significant because construction activities would materially alter or destroy the potential
4 of these resources to yield information useful in archaeological research, the basis for the
5 significance of these resources, through excavation and disruption of the spatial associations that
6 contain meaningful information. Mitigation Measure CUL-3a: *Prepare and Implement an*
7 *Archaeological Resources Management Plan*, Mitigation Measure CUL-3b: *Conduct Cultural Resources*
8 *Sensitivity Training*, and Mitigation Measure CUL-3c: *Implement Archaeological Protocols for Field*
9 *Investigations* would mitigate this impact by training personnel and recovering scientifically
10 important material prior to construction throughout the sensitive area, but would not guarantee
11 that all of the scientifically consequential information would be retrieved because feasible
12 archaeological excavation typically only retrieves a sample of the deposit, and portions of the site
13 with consequential information may remain after treatment. Mitigation measures involving
14 construction activities such as ground disturbance could damage these remaining portions of the
15 deposit. Therefore, implementation of other mitigation measures may impact identified
16 archaeological resources and the impact of historical resources would be substantial.

17 Overall, the impacts on identified archaeological resources from construction of compensatory
18 mitigation and implementation of other mitigation measures, combined with project alternatives,
19 would not change the significant and unavoidable impact conclusion.

20 **Impact CUL-4: Impacts on Unidentified Archaeological Resources That May Be Encountered** 21 **in the Course of the Project**

22 ***All Project Alternatives***

23 Appendix 19B, *Archaeological Sensitivity Analysis Report (Confidential)*, presents an overview of the
24 sensitivity of the study area for previously unidentified archaeological resources and demonstrates
25 that additional early Native American and post-contact resources that have not yet been identified
26 are almost certain to occur in the study area. Geoarchaeological analysis revealed that deeply buried
27 landforms and surfaces with the potential to contain archaeological resources are widespread
28 across the study area and may extend to a depth of 68 feet below mean sea level in some areas, and
29 are closer to the surface in other areas.

30 While surveys would be completed for the study area once access is available, such surveys cannot
31 guarantee that all archaeological resources would be identified prior to construction. The rapid rate
32 at which alluvium and sediment accumulates in the Delta region and the geologically unstable
33 nature of the floodplain and riverbank environments in which these resources may occur make it
34 likely that numerous resources are naturally capped below surface soils. Cultural resource inventory
35 efforts cannot always identify such resources, even with exhaustive sampling methods designed to
36 reveal resources with little or no surface manifestation because subsurface sampling to identify
37 every buried resource is economically and technically infeasible.

38 Many of these unidentified early Native American archaeological resources are likely to qualify as
39 historical resources or unique archaeological resources because early Native American resources in
40 the Delta region tend to be large and contain a rich material culture. In particular, burial features
41 tend to be associated with numerous shell ornaments, charmstones, and associated grave goods.
42 Habitation components often contain abundant faunal and floral remains that elucidate early Native
43 American adaptations such as subsistence methods.

1 In addition to early Native American archaeological resources, the study area is also sensitive for
2 post-contact archaeological resources. Archaeological debris from post-contact activity is likely to be
3 associated with significant themes such as agriculture, reclamation, and settlement of the Delta
4 region. The size of the study area and the intensity of historical activity suggest that there are likely
5 to be resources that may qualify as historical resources or unique archaeological resources.

6 Ground-disturbing work at depths below 70 feet below mean sea level, such as tunnel boring and
7 ground improvements conducted from within the tunnel, would occur below the level where
8 archaeological resources have the potential to occur, and thus would not damage unidentified
9 archaeological resources. Ground-disturbing work, including the construction of surface features
10 such as intakes, and the subterranean excavation of launch, maintenance, and reception shafts may
11 disturb and damage these resources. This damage and disturbance may materially impair these
12 resources because this disturbance would reduce the ability of these resources to yield data useful
13 in research.

14 ***CEQA Conclusion—All Project Alternatives***

15 Construction has the potential to disturb previously unidentified archaeological resources qualifying
16 as historical resources or unique archaeological resources. Because direct excavation, compaction,
17 or other disturbance may disrupt the spatial associations that contain scientifically useful
18 information, these activities would alter the potential basis for eligibility, thus materially altering the
19 resource and resulting in a significant impact. Because these resources would not be identified prior
20 to construction, they cannot be recorded and impacts cannot be managed through construction
21 treatment. Implementation of Mitigation Measures CUL-3a: *Prepare and Implement an*
22 *Archaeological Resources Management Plan*, CUL-3b: *Conduct Cultural Resources Sensitivity Training*,
23 and CUL-3c: *Implement Archaeological Protocols for Field Investigations* would reduce the potential
24 for this impact by implementing monitoring and discovery protocols and providing training to all
25 personnel involved in ground-disturbing activities. However, because archaeological resources may
26 not be identified through these measures prior to disturbance, the effect cannot be entirely avoided.
27 Therefore, this impact would remain significant and unavoidable because resource locations and
28 extents are unknown.

29 **Mitigation Measure CUL-3a: Prepare and Implement an Archaeological Resources** 30 **Management Plan**

31 See description of Mitigation Measure CUL-3a under Impact CUL-3.

32 **Mitigation Measure CUL-3b: Conduct Cultural Resources Sensitivity Training**

33 See description of Mitigation Measure CUL-3b under Impact CUL-3.

34 **Mitigation Measure CUL-3c: Implement Archaeological Protocols for Field Investigations**

35 See description of Mitigation Measure CUL-3c under Impact CUL-3.

1 ***Mitigation Impacts***

2 *Compensatory Mitigation*

3 Although the Compensatory Mitigation Plan described in Appendix 3F does not act as mitigation for
4 impacts on cultural resources from project construction or operations, its implementation could
5 result in impacts on cultural resources.

6 The project includes compensatory mitigation that involves the creation of habitat restoration areas.
7 The construction of the compensatory mitigation habitat restoration areas has the potential to cause
8 impacts on unidentified archaeological resources that may be encountered in the course of project
9 construction similar to those identified for the project alternatives. The potential to encounter
10 unanticipated archaeological resources during construction exists for all three compensatory
11 mitigation locations (I-5 ponds, Bouldin Island, and channel margin and tidal habitat restoration)
12 due to the inability of preconstruction surface-level pedestrian surveys conducted as mitigation for
13 Impact CUL-3: *Impacts on Identified Archaeological Resources Resulting from the Project* to identify
14 subsurface archaeological deposits. Mitigation Measures CUL-3a: *Prepare and Implement an*
15 *Archaeological Resources Management Plan* and CUL-3b: *Conduct Cultural Resources Sensitivity*
16 *Training* would be implemented to reduce the potential for this impact. However, because
17 archaeological resources may not be identified through these measures prior to ground disturbance,
18 the effect cannot be entirely avoided. Therefore, the impact would remain significant and
19 unavoidable, and combined with project alternatives would not change the overall impact
20 conclusion.

21 *Other Mitigation Measures*

22 Some mitigation measures would involve the use of heavy equipment such as graders, excavators,
23 dozers, and haul trucks that would have the potential to result in impacts on unidentified
24 archaeological resources. The mitigation measures with potential to result in impacts on historical
25 resource are: Mitigation Measures BIO-2c: *Electrical Power Line Support Placement*, AG-3:
26 *Replacement or Relocation of Affected Infrastructure Supporting Agricultural Properties*, AES-1c:
27 *Implement Best Management Practices to Implement Project Landscaping Plan*, and AQ-9: *Develop*
28 *and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP*
29 *Operational Pumping to Net Zero*. Temporary impacts on unidentified archaeological resources
30 resulting from implementation of mitigation measures would be similar to construction effects of
31 the project alternatives in certain construction areas and would contribute to archaeological
32 resource impacts from the project alternatives. Mitigation measures involving construction
33 activities have the potential to disturb previously unidentified archaeological resources qualifying as
34 historical resources or unique archaeological resources. Because direct excavation, compaction, or
35 other disturbance may disrupt the spatial associations that contain scientifically useful information,
36 these activities would alter the potential basis for eligibility, thus materially altering the resource.
37 Implementation of Mitigation Measures CUL-3a: *Prepare and Implement an Archaeological Resources*
38 *Management Plan*, CUL-3b: *Conduct Cultural Resources Sensitivity Training*, and CUL-3c: *Implement*
39 *Archaeological Protocols for Field Investigations* would reduce the potential for this impact by
40 implementing monitoring and discovery protocols and providing training to all personnel involved
41 in ground-disturbing activities. However, because archaeological resources may not be identified
42 through these measures prior to disturbance, the effect cannot be entirely avoided. Therefore,
43 implementation of other mitigation measures may impact unidentified archaeological resources and
44 the impact of archaeological resources would be substantial.

1 Overall, the impacts on unidentified archaeological resources from construction of compensatory
2 mitigation and implementation of other mitigation measures, combined with project alternatives,
3 would not change the significant and unavoidable impact conclusion.

4 **Impact CUL-5: Impacts on Buried Human Remains**

5 ***All Project Alternatives***

6 The project footprint is sensitive for buried human remains. Because these isolated resources are
7 not associated with larger deposits, their distribution and depth cannot be estimated. Construction
8 of the project would require ground-disturbing work that may damage previously unidentified
9 human remains, resulting in direct effects on these resources. While inventory and monitoring and
10 sensitivity training efforts are prescribed under Mitigation Measure CUL-3a: *Prepare and Implement*
11 *an Archaeological Resources Management Plan*, Mitigation Measure CUL-3b: *Conduct Cultural*
12 *Resources Sensitivity Training*, and Mitigation Measure CUL-3c: *Implement Archaeological Protocols*
13 *for Field Investigations*, the large acreages subject to disturbance make exhaustive sampling to
14 identify all buried and isolated human remains technically and economically infeasible. For these
15 reasons, there exists the potential that such resources may be damaged or exposed before they can
16 be discovered through inventory or monitoring.

17 ***CEQA Conclusion—All Project Alternatives***

18 The study area is sensitive for buried human remains. Construction would require ground-
19 disturbing work that may damage previously unidentified human remains, resulting in direct effects
20 on these resources. Disturbance of human remains, including remains interred outside of
21 cemeteries, is considered a significant impact in the CEQA Appendix G checklist; therefore, any
22 disturbance of such remains would be a significant impact. Implementation of Mitigation Measures
23 CUL-3a: *Prepare and Implement an Archaeological Resources Management Plan*, CUL-3b: *Conduct*
24 *Cultural Resources Sensitivity Training*, and CUL-3c: *Implement Archaeological Protocols for Field*
25 *Investigations* would reduce the potential for this impact and its severity by implementing
26 monitoring and discovery protocols and providing training to all personnel involved in ground-
27 disturbing activities, but not to a less-than-significant level because they would not guarantee that
28 buried human remains could be discovered and treated in advance of construction; the scale of
29 construction makes it technically and economically infeasible to perform the level of sampling
30 necessary to identify all such buried human remains prior to construction. Therefore, this impact,
31 even with mitigation, would be significant and unavoidable.

32 **Mitigation Measure CUL-3a: Prepare and Implement an Archaeological Resources** 33 **Management Plan**

34 See description of Mitigation Measure CUL-3a under Impact CUL-3.

35 **Mitigation Measure CUL-3b: Conduct Cultural Resources Sensitivity Training**

36 See description of Mitigation Measure CUL-3b under Impact CUL-3.

37 **Mitigation Measure CUL-3c: Implement Archaeological Protocols for Field Investigations**

38 See description of Mitigation Measure CUL-3c under Impact CUL-3.

Mitigation Measure CUL-5: Follow State and Federal Law Governing Human Remains If Such Resources Are Discovered during Construction

If human remains are discovered, DWR and the construction contractors will coordinate with the county coroner and California Native American Heritage Commission (NAHC) to make the determinations and perform the management steps prescribed in California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98. The provisions of these state laws apply unless discoveries occur on land owned or controlled by the federal government. For discoveries on federal land, procedures for Native American Graves Protection and Repatriation Act will be followed. Compliance with state law for discoveries occurring on private or state lands requires notification of the county coroner so the coroner may determine if an investigation regarding the cause of death is required. If the coroner determines that the remains are of early Native American origin, the coroner will notify the NAHC.

Upon notification the NAHC will identify the most likely descendant (MLD). DWR will coordinate with the MLD to ascertain whether the Tribe has standard procedures for treatment of burials or human remains. DWR will coordinate closely with the Tribe to develop an appropriate treatment plan for the reinterment or other consideration of the remains. If the NAHC fails to identify the MLD, or if the parties cannot reach agreement as to how to treat the remains as described in California Public Resources Code Section 5097.98(e), DWR will reinter the remains at a location not subject to further disturbance. DWR will ensure the protections prescribed in California Public Resources Code Section 5097.98(e) are performed, such as the use of conservation easements and recording of the location with the relevant county and CHRIS Information Center. If the burial appears to be a contributor to the Delta Tribal cultural landscape, DWR will also implement Mitigation Measure TCR-3: *Implement Measures to Restore and Enhance the Physical, Spiritual, and Ceremonial Qualities of Affected Tribal Cultural Resources* including, but not limited to, the provision for access to designated land for repatriation of disturbed cultural materials associated with burials.

Mitigation Impacts

Compensatory Mitigation

Although the Compensatory Mitigation Plan described in Appendix 3F does not act as mitigation for impacts on buried human remains from project construction or operations, its implementation could result in impacts on buried human remains.

The project includes compensatory mitigation that involves the creation of habitat restoration areas. The construction of these areas has a similar potential to disturb buried human remains as is identified for the project alternatives. While there are no known buried human remains at any of the three compensatory mitigation locations (I-5 ponds, Bouldin Island, and channel margin and tidal habitat restoration areas), the entire project area is sensitive for buried human remains that could be encountered during ground-disturbing work. The potential to encounter buried human remains during construction exists for all three compensatory mitigation locations. Mitigation Measures CUL-3a: *Prepare and Implement an Archaeological Resources Management Plan* and CUL-3b: *Conduct Cultural Resources Sensitivity Training* would be implemented to reduce the potential for this impact. Mitigation Measure CUL-5: *Follow State and Federal Law Governing Human Remains If Such Resources Are Discovered during Construction* would be implemented if buried human remains are encountered during construction. However, because buried human remains may not be identified or

1 protected through these measures prior to ground disturbance, the effect cannot be entirely
2 avoided. Therefore, this impact, even with mitigation, would be significant and unavoidable, and
3 combined with project alternatives would not change the overall impact conclusion.

4 Other Mitigation Measures

5 Some mitigation measures would involve the use of heavy equipment such as graders, excavators,
6 dozers, and haul trucks that would have the potential to result in impacts on buried human remains.
7 The mitigation measures with potential to result in impacts on human remains are: Mitigation
8 Measures BIO-2c: *Electrical Power Line Support Placement*, AG-3: *Replacement or Relocation of*
9 *Affected Infrastructure Supporting Agricultural Properties*, AES-1c: *Implement Best Management*
10 *Practices to Implement Project Landscaping Plan*, and AQ-9: *Develop and Implement a GHG Reduction*
11 *Plan to Reduce GHG Emissions from Construction and Net CVP Operational Pumping to Net Zero*.
12 Temporary impacts on buried human remains resulting from implementation of mitigation
13 measures would be similar to construction effects of the project alternatives in certain construction
14 areas and would contribute to the buried human remain impacts of the project alternatives.
15 Mitigation measures would occur in areas sensitive for buried human remains and require ground-
16 disturbing work that may damage previously unidentified human remains, resulting in direct effects
17 on these resources. Implementation of Mitigation Measures CUL-3a: *Prepare and Implement an*
18 *Archaeological Resources Management Plan*, CUL-3b: *Conduct Cultural Resources Sensitivity Training*,
19 and CUL-3c: *Implement Archaeological Protocols for Field Investigations* would reduce the potential
20 for this impact and its severity by implementing monitoring and discovery protocols and providing
21 training to all personnel involved in ground-disturbing activities. However, mitigation would not
22 guarantee that buried human remains could be discovered and treated in advance of construction;
23 the scale of construction makes it technically and economically infeasible to perform the level of
24 sampling necessary to identify all such buried human remains prior to construction and
25 implementation of other mitigation measures. Therefore, implementation of other mitigation
26 measures may affect buried human remains and the impact would be substantial.

27 Overall, the impacts on buried human remains from construction of compensatory mitigation and
28 implementation of other mitigation measures, combined with project alternatives, would not change
29 the significant and unavoidable impact conclusion.

30 **19.3.4 Cumulative Analysis**

31 This cumulative impact analysis considers projects that could affect the same resources and, where
32 relevant, in the same time frame as the project alternatives, resulting in a cumulative impact.
33 Cultural resources are expected to be affected as a result of past, present, and reasonably
34 foreseeable future projects.

35 Proposed projects and plans that have the potential to contribute to cumulative impacts on cultural
36 resources in the vicinity of the project alternatives are listed in Table 19-7. This table lists projects,
37 as described in Appendix 3C, *Defining Existing Conditions, No Project Alternative, and Cumulative*
38 *Impact Conditions*, which have been identified as cumulative projects. Cumulative projects include
39 those within and in proximity to the areas of impact. Projects that lie outside of the areas of impact
40 (e.g., projects occurring in the upper Sacramento Valley, lower San Joaquin Basin, and farther south)
41 are not included. Only projects that would result in changes to the integrity of built-environment
42 resources or ground-disturbing activities that could disturb archaeological resources are included in
43 this section.

1 **Table 19-7. Cumulative Impacts on Cultural Resources from Plans, Policies, and Programs**

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
Central Valley Flood Protection Plan	DWR	Ongoing	CVFPP will be a sustainable, integrated flood management plan describing the existing flood risk in the Central Valley and recommending actions to reduce the probability and consequences of flooding. Produced in partnership with federal, Tribal, local, and regional partners and other interested parties, CVFPP will also identify the mutual goals, objectives, and constraints important in the planning process; distinguish plan elements that address mutual flood risks; and recommend improvements to the state-federal flood protection system.	CVFPP would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. Recommendations in the CVFPP may result in impacts on the Clifton Court Forebay, a historical resource. Also, areas adjacent to perennial water sources, such as rivers and the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Clifton Court Forebay Fishing Facility	DWR	Initial Study/ Mitigated Negative Declaration was circulated for public review starting June 18, 2013.	The project consists of installing a fishing pier into Clifton Court Forebay, building other recreation and access improvements, and providing lighting and signage.	This would result in a site-specific increase in the amount of infrastructure seen near the forebay. Implementation of this project may result in an impact on the Clifton Court Forebay, a historical resource. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Delta Levees Flood Protection Program	DWR	Ongoing	This grants program works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta by maintaining, planning, and completing	This program would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation projects that would raise

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			levee rehabilitation projects. The program presently focuses on flood-control projects and related habitat projects for eight western Delta Islands (Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell and Webb Islands) and for the towns of Thornton and Walnut Grove.	levees to protect public and private lands that could result in visual or physical impacts through vegetation removal and increased levee heights. Many of the Delta levees are historical resources so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Delta Risk Management Strategy	DWR	Ongoing	The first phase of DRMS analyzes the risks and consequences of levee failure in the Delta region. The analysis considers current and future risks of levee failures from earthquakes, high water conditions, climate change, subsidence, and dry-weather events. The analysis also estimates the consequences of levee failures to the local and state economy, public health and safety, and the environment. The DRMS Phase 1 report findings will be used to develop a set of strategies to manage levee failure risks in the Delta and to improve the management of state funding for levee maintenance and improvement.	Projects that would evolve from DRMS findings would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. Many of the Delta levees are historical resources so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
FloodSAFE California	DWR	Ongoing	FloodSAFE promotes public safety through integrated flood management while protecting environmental resources and emphasizes action in the Delta. This program is very broad, but it is designed to improve flood safety throughout the state while encouraging sound	Projects that would evolve from FloodSAFE findings would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			conservation actions that benefit California's native fish and wildlife and promote wildlife-friendly agricultural practices.	projects that would raise levees to protect public and private lands that would result in significant visual impacts through vegetation removal and increased levee heights. Many of the Delta levees are historical resources, and are adjacent to historical resources, so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Levee Repairs Program	DWR	Ongoing	This is a program to repair state and federal project levees. To date, hundreds of levee repair sites have been identified. The most critical sites have already been improved. Repairs to other sites are either in progress or scheduled to be completed in the near future, and still more repair sites are in the process of being identified, planned, and prioritized.	This program would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation projects that would raise levees to protect public and private lands that would result in significant visual impacts through vegetation removal and increased levee heights. Many of the Delta levees are historical resources, and are adjacent to historical resources, so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as rivers and the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
North Delta Flood Control and Ecosystem Restoration Project	DWR	Ongoing	The project is intended to improve flood management and provide ecosystem benefits in the North Delta area through actions such as construction of setback levees and configuration of flood bypass areas to create quality habitat for species of concern. The purpose of the project is to implement flood-control improvements in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes. Flood-control improvements are needed to reduce damage to land uses, infrastructure, and the Bay-Delta ecosystem resulting from overflows caused by insufficient channel capacities and catastrophic levee failures in the study area.	potential to impact archaeological resources. The project would result in the conversion of existing land uses to restored habitat and the enhancement of marginal habitats to increase habitat value. This project would result in beneficial impacts through the reintroduction of habitats that had been lost through the original conversion of natural lands to agriculture and could increase biodiversity that would result in benefits to wildlife and scenery viewing. Flood control improvements may result in significant impacts where new or taller levees are introduced or rock slope protection replaces vegetation on levee slopes. Many of the Delta levees are historical resources, and are adjacent to other historical resources, so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Cache Slough Area Restoration	DWR and CDFW	Ongoing	Restoration efforts would support native fish species by creating or enhancing natural habitats and improving the food web that fish require. Surrounding lands that are at elevations that would function as floodplain or marsh if not separated by levees could also be included in the Cache Slough Area. This broader area includes roughly 45,000 acres of existing and potential	Project would give rise to projects that would affect the visual landscape. Beneficial visual impacts could result where restoration and enhancement activities improve existing visual conditions and increase visual diversity. Many of the Delta levees are historical resources, and are adjacent to historical resources, so this has the potential to impact those resources. Significant impacts could result where

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			open water, marsh, floodplain, and riparian habitat.	restoration, enhancement, and management measures require built elements that detract from, instead of compliment or improve, the visual landscape. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Delta Fish Agreement (Four Pumps Project)	DWR and CDFW	Ongoing	The agreement provides a mechanism for offsetting significant fishery impacts caused by the diversion of water at the Harvey O. Banks Pumping Plant. Direct losses of Chinook salmon, steelhead, and striped bass are offset or mitigated through the funding and implementation of fish mitigation projects. DWR and CDFW work closely with the Fish Advisory Committee to implement the agreement and projects funded under the agreement.	The agreement would give rise to projects that would affect cultural resources. The Harvey O. Banks Pumping Plant is a historical resource and may be impacted by this project. If work for these efforts take place on or near perennial water sources, such as the Delta, these areas were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development. If that is the case, this may contain remnants of these activities and has the potential to impact archaeological resources.
Dutch Slough Tidal Marsh Restoration Project	DWR and California State Coastal Conservancy	Ongoing	The project would restore wetland and uplands and provide public access to the 1,166-acre Dutch Slough property. The project would provide ecosystem benefits, including habitat for sensitive aquatic species. Two neighboring projects proposed by other agencies that are related to the Dutch Slough Restoration Project collectively contribute to meeting project objectives: the City of Oakley's proposed Community Park and Public Access Conceptual Master	Areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact cultural resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			Plan for 55 acres adjacent to the wetland restoration project and 4 miles of levee trails, and the Ironhouse Sanitary District's West Marsh Creek Delta Restoration Project, a restoration of a portion of the Marsh Creek delta on an adjacent 100-acre parcel.	
Franks Tract Futures	DWR and Reclamation	Planning Phase	Under the project, state and federal agencies would evaluate and implement a strategy to significantly reduce salinity levels in the south Delta and at the water export facilities. The project would improve water supply reliability by reconfiguring levees and/or Delta circulation patterns around Franks Tract while accommodating recreational interests.	This would introduce considerable industrial-looking structures on waterways where none presently exists. This would alter the existing setting at this location and may result in impacts on cultural resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Canal Modernization Project	CCWD	Ongoing	The project will replace the canal with a pipeline along a portion of the 48-mile Contra Costa Canal near Oakley. The first phase was initiated in 2009. The project will encase a 1,900-foot portion of the Contra Costa Canal to reduce salinity and water quality impacts of groundwater seepage from adjacent agricultural areas, as well as to increase public safety and flood protection. Contra Costa Water District will be initiating plans for the remaining sections.	This would replace visible canals with a buried pipeline and remove embankments. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this project has the potential to impact cultural resources.
Delta Protection Commission Land Use and Resource Management Plan Update	Delta Protection Commission	Ongoing	DPC is currently updating its LURMP, which was originally adopted in 1995. The LURMP outlines the long-term land use requirements for the Sacramento-San Joaquin Delta and sets out findings, policies,	Plan actions may give rise to restoration and management activities that would impact cultural resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
Delta Plan	Delta Stewardship Council	Ongoing	<p>and recommendations in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. The updated LURMP will place increased emphasis on the requirement for local government general plans to provide for consistency with the provisions of the LURMP. DPC develops priorities and timelines for tasks to be implemented each year, and provides annual progress reports to the Legislature.</p> <p>The Delta Reform Act, created by SB X7-1, established the coequal goals for the Delta of “providing a more reliable water supply for California and protecting, restoring, and enhancing the delta ecosystem.” (Pub. Resources Code § 29702; Wat. Code § 85054). These coequal goals are to be achieved “in a manner that protects and enhances the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place.” (Wat. Code § 85054).</p> <p>The Delta Reform Act also established the DSC. The DSC is tasked with furthering the state’s coequal goals for the Delta through development of the <i>Delta Plan</i>, a comprehensive, long-term, resource management plan for the Delta, containing both regulatory policies and recommendations aimed at furthering the coequal goals and promoting a healthy Delta ecosystem. The <i>Delta Plan</i> provides for a distinct regulatory process for activities that qualify as</p>	Plan actions may give rise to restoration and management activities that would affect the cultural resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			Covered Actions under Water Code Section 85057.5. State and local agencies proposing Covered Actions, prior to initiating implementation of that action, must prepare a written certification of consistency with detailed findings regarding consistency with applicable <i>Delta Plan</i> policies and submit that certification to the DSC.	
Liberty Island Conservation Bank	Reclamation District 2093	Ongoing	This project would create a conservation bank on the northern tip of Liberty Island that would preserve, create, restore, and enhance habitat for native Delta fish species. The project consists of creating tidal channels, perennial marsh, riparian habitat, and occasionally flooded uplands on the site. The project also includes the breaching of the northernmost east-west levee, and preservation and restoration of shaded riverine aquatic habitat along the levee shorelines of the tidal sloughs.	Many of the Delta levees are historical resources, and are adjacent to other historical resources, so this has the potential to impact those resources. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Flood Management Program	SAFCA, Central Valley Flood Protection Board, and U.S. Army Corps of Engineers	Ongoing	The program provides flood-control improvements. Projects include the South Sacramento Streams Project and the Sacramento River Bank Protection Project. The South Sacramento Streams Project consists of levee, floodwall, and channel improvements along the Sacramento River to protect the City of Sacramento from flooding. The Sacramento River Bank Protection Project addresses long-term erosion protection along the Sacramento River and its tributaries. Bank protection measures typically consist of large angular rock placed to protect the bank, with a layer	This program would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation projects that would raise levees to protect public and private lands that would result in impacts it undertaken within the setting or boundary of cultural resources. Also, areas adjacent to perennial water sources, such as rivers and the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			of soil/rock material to allow bank revegetation.	post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Sacramento County General Plan	Sacramento County	Ongoing	The comprehensive general plan update will guide the growth and development of the County through the year 2030. The plan was adopted on November 9, 2011. The general plan update covers the entire unincorporated portion of Sacramento County, including portions of the Delta within Sacramento County. The update also includes a Delta Protection Element that identifies goals and objectives within the primary zone of the Delta.	The general plan includes protection of built resources. If growth is guided to areas where archaeological resources are located, or to areas where archaeological resources are likely to be located such as near perennial water sources where, remnants of early Native American use or post-contact development may exist, then this has the potential to impact archaeological resources.
South Sacramento HCP	Sacramento County and USFWS	Ongoing	The proposed South Sacramento HCP is a regional plan to address issues related to species conservation, agricultural protection, and urban development in south Sacramento County. The proposed HCP would allow land owners to engage in the "incidental take" of listed species (i.e., to destroy or degrade habitat) in return for conservation commitments from local jurisdictions. The conservation measures outlined in the HCP would minimize and mitigate the impact of incidental take and provide for the conservation of covered species that may occur in the plan area.	Areas adjacent to perennial water sources, such as rivers and the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, the HCP has the potential to impact archaeological resources.
SRWTP Facility Upgrade Project (EchoWater)	Sacramento Regional County Sanitation District	Ongoing	This project would upgrade existing secondary treatment facilities to advanced unit processes including improved nitrification/denitrification and filtration at the Sacramento Regional Wastewater Plant.	Sacramento Regional Wastewater Plant is a historical resource. This project has the potential to impact built-environment historical resources. Also, areas adjacent to perennial water sources, such as the Sacramento River, were important resource collection and potential habitation areas

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
San Joaquin County General Plan Update	San Joaquin County	Ongoing	The San Joaquin County General Plan 2010 was adopted on July 29, 1992. The general plan provides guidance for future growth in a manner that preserves the county's natural and rural assets. Most of the urban growth is directed to existing urban communities. In December 2016, San Joaquin County began the process to update the 2008 general plan. The general plan update will provide the blueprint for growth in the county unincorporated areas through 2035.	for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources. The general plan includes protection of built resources. If growth is guided to areas where archaeological resources are located, or to areas where archaeological resources are likely to be located such as near perennial water sources where, remnants of early Native American use or post-contact development may exist, then this has the potential to impact archaeological resources.
Sacramento River Bank Protection Project	USACE	Planned	The project is a long-term flood risk management project designed to enhance public safety and help protect property along the Sacramento River and its tributaries. While the original authorization approved the rehabilitation of 430,000 linear feet of levee, the 1974 Water Resources Development Act added 405,000 linear feet to the authorization and a 2007 bill authorized another 80,000 linear feet for a total of 915,000 linear feet of project.	The Sacramento River Levee is a historical resource. The project would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation projects that would raise levees to protect public and private lands that would result in impacts on cultural resources. Also, this project contains known archaeological resources and is adjacent to a perennial water source. These areas were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
Sacramento Deep Water Ship Channel Project	USACE and Port of Sacramento	Ongoing	The proposed project would complete the deepening and widening of the navigation channel to its authorized depth of 35 feet. Deepening of the existing ship channel is anticipated to allow for movement of cargo via larger, deeper draft vessels. Widening portions of the channel would increase navigational safety by increasing maneuverability. The 46.5-mile-long ship channel lies within Contra Costa, Solano, Sacramento, and Yolo Counties and serves the marine terminal facilities at the Port of Sacramento. The Sacramento Deep Water Ship Channel joins the existing 35-foot-deep channel at New York Slough, thereby affording the Port of Sacramento access to San Francisco Bay Area harbors and the Pacific Ocean.	impact archaeological resources. The Sacramento Deep Water Ship Channel may be a historical resource and may be impacted by the project. Dredging excavation may also impact submerged archaeological resources.
Anadromous Fish Screen Program	Reclamation and USFWS	Complete	AFSP will help prevent entrainment of fish at priority diversions throughout the Central Valley.	This project would result in ground disturbance and incremental additions to the amount of infrastructure seen on water bodies and waterways in the study area. This could result in significant impact if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as rivers and the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact cultural resources.
Delta Fish Species Conservation Hatchery	USFWS, Reclamation, DWR, and CDFW	Rio Vista facility plans being developed	The Interim Federal Action Plan includes the development of a permanent fish restoration facility in Rio Vista. In addition, upgrades to	The project would repurpose the Rio Vista Army base, a potential historical resource. This could result in a significant impact if cultural

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			the existing Delta Smelt Research and Culture Facility at Banks Pumping Plant would be made.	resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
West Sacramento Levee Improvements Program	WSAFCA and U.S. Army Corps of Engineers	Planned	The program would construct improvements to the levees protecting West Sacramento to meet local and federal flood protection criteria. The program area includes the entire WSAFCA boundaries which encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Deep Water Ship Channel. The system associated with these waterways includes over 50 miles of levees.	This program would result in site-specific repairs or levee upgrades over areas of varying sizes. Some projects would repair levees in a way that would appear visually similar to adjacent levees. However, there would be larger levee rehabilitation projects that would raise levees to protect public and private lands that would result in significant impacts on setting through vegetation removal and increased levee heights. This could result in significant impact if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Sacramento River, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Yolo County General Plan Update	Yolo County	Ongoing	The Yolo County General Plan was updated and adopted on November 10, 2009, and provides for growth and development in the unincorporated area through 2030. Yolo County occupies 653,549 acres (1,021 square miles) in the California Central	The general plan includes measures for the protection of cultural resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			<p>Valley along the Sacramento River Delta.</p> <p>In May 2003, Yolo County began a comprehensive update to the county's general plan. In January 2009, the county conducted a series of public workshops to receive comments on the Revised Draft 2030 Countywide General Plan, and the Draft EIR was released in April 2009.</p> <p>The Final EIR and General Plan were released in October 2009 and the General Plan adopted in November 2009.</p>	
Franklin Bulk Substation	Sacramento Municipal Utility District	Planned	This project will construct a new distribution substation, the Rancho Seco-Pocket 230 kV No. 1 Line will be looped into the substation, and 2-16.2 MVar of capacitor banks will be installed.	This project would introduce project facilities on open space lands where none presently exist and would increase the presence of utility infrastructure in the area. Also, if this is an area of post-contact development or adjacent to perennial water sources, it may contain remnants of early Native Americans or post-contact use. Therefore, this has the potential to impact archaeological resources. This could result in significant impact if cultural resources are within the setting or project boundaries.
Sites Reservoir/ North of the Delta Offstream Storage	Sites Reservoir Authority	Ongoing	By operating in conjunction with other California reservoirs, Sites Reservoir substantially increases water supply flexibility, reliability, and resiliency in drier years. Sites Reservoir is the only proposed storage facility in the State of California that will help with statewide operational effectiveness of the SWP and CVP. Located 10 miles west of the town of Maxwell in rural Glenn and Colusa counties, Sites Reservoir would be an off-stream storage facility that captures and stores	This project has the potential to affect cultural resources with the creation of water storage and conveyance facilities.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			stormwater flows in the Sacramento River for release in dry and critical years for environmental use and for California communities, farms, and businesses when it is so desperately needed.	
Twitchell Island Levee Habitat Restoration Project	CDFW	Planned	This project has been identified as one of the projects that will be implemented under California EcoRestore.	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Grizzly Slough Floodplain Project	DWR	Planned	The project will reduce flooding and provide contiguous aquatic and floodplain habitat along the downstream portion of the Cosumnes Preserve by modifying levees on Grizzly Slough. Benefits to ecosystem processes, fish, and wildlife will be achieved by recreating floodplain seasonal wetlands and riparian habitat on the Grizzly Slough proper.	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Lower Putah Creek Realignment	CDFW	Implemented	The project will restore 300–700 acres of tidal freshwater wetlands, creating 5 miles of a new fish channel, improving anadromous fish access to 25 miles of stream, and restoring at least 5,000 square feet of salmon spawning habitat.	Areas adjacent to perennial water sources, such as Putah Creek, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
Wallace Weir Improvements and Tule Canal Agricultural Crossings	Reclamation District 108 and DWR	Ongoing	The project replaced the seasonal earthen dam at Wallace Weir with a permanent, operable structure that would provide year-round operational control. The project also included a fish rescue facility that returns fish back to the Sacramento River.	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Sacramento River, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Prospect Island Tidal Habitat Restoration Project	DWR and CDFW	Planned	The intent of the project is to restore freshwater tidal marshes and associated aquatic habitat. However, funding for the wildlife refuge and the restoration project was never authorized. This project has been identified as one of the projects that will be implemented under California EcoRestore. The Final EIR was certified in 2019.	Areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Southport Early Implementation Project	WSAFCA	Planned	The West Sacramento Area Flood Control Agency is proposing the flood risk-reduction measures that will be implemented along 6 miles of the levee that runs along the west bank of the Sacramento River from the Barge Canal to the South Cross Levee.	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Sacramento River, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
McCormack-Williamson Tract Flood Control and Ecosystem Restoration Project	DWR	Planned	This project is a part of the North Delta Flood Control and Ecosystem Restoration Project and will implement flood control improvements principally on and around McCormack-Williamson Tract in a manner that benefits aquatic and terrestrial habitats, species, and	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
			ecological processes. Flood-control improvements are needed to reduce damage to land uses, infrastructure, and the Bay-Delta ecosystem caused by catastrophic levee failures in the study area.	post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Hill Slough Restoration Project	CDFW	Planned	The purpose of the project is to restore brackish tidal marsh and associated upland ecotone at the northern Suisun Marsh near the corner of Highway 12 and Grizzly Island Road to benefit endangered as well as migratory and resident species.	Areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Goat Island at Rush Ranch Tidal Marsh Restoration	Solano Land Trust	Planning	This project aims to restore tidal marsh habitat by reconnecting and reestablishing tidal marsh hydrology and related physical and ecological processes within and around Goat Island Marsh. This project will be implemented in conjunction with construction of an Interpretive Nature Trail to Goat Island Marsh to offset public access impacts resulting from closure of the levee trail.	Areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.
Knights Landing Outfall Gates Fish Barrier Project	California Natural Resources Agency	Complete	The project will rehabilitate the outfall gates by repairing known structural deficiencies (including scouring found at the inlet and outlet gates), replacing worn out appurtenances, construct a trash barrier system to protect the gates and ease debris collection, and upgrading the electrical and communication system to include backup capability to meet current USACE O&M standards	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.

Program/ Project	Agency	Status	Description of Program/ Project	Impacts on Cultural Resources
SR 239 Project (East Bay – Contra Costa, Alameda, northern San Joaquin Counties)	California Department of Transportation, Contra Costa Transportation Authority, and Contra Costa County	Planned	The SR 239 Project would provide a new, four-lane highway from SR 4 near Marsh Creek Road in Brentwood, in Contra Costa County, to I-205 and/or I-580 in Alameda County. The project would alleviate traffic issues on Byron Highway and improve access to the Byron Airport.	This could result in impacts if cultural resources are within the setting or project boundaries. Also, areas adjacent to perennial water sources, such as the Delta, were important resource collection and potential habitation areas for early Native Americans, as well as post-contact development and may contain remnants of these activities. Therefore, this has the potential to impact archaeological resources.

1 AFSP = Anadromous Fish Screen Program; BDCP = Bay Delta Conservation Plan; CCWD = Contra Costa Water District;
2 CDFW = California Department of Fish and Wildlife; CVFPP = Central Valley Flood Protection Plan; DWR = California
3 Department of Water Resources;; EIR = environmental impact report; EIS = environmental impact statement;
4 HCP = Habitat Conservation Plan LURMP = Land Use and Resource Management Plan; DRMS = Delta Risk Management
5 Strategy; I- = Interstate; NMFS = National Marine Fisheries Service; O&M = operations and maintenance;
6 Reclamation = U.S. Bureau of Reclamation; SR= State Route;; SRWTP = Sacramento Regional Water Treatment Plant;
7 USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service; WSAFCA = West Sacramento Area Flood
8 Control Agency.
9

10 **19.3.4.1 Cumulative Impacts of the No Project Alternative**

11 The ongoing projects and programs in the Delta under the No Project Alternative in addition to the
12 cumulative projects would require construction to either construct new facilities or implement
13 restoration and habitat enhancement goals. SWP/CVP operations would require repair,
14 maintenance, or protection of infrastructure such as levees, and may also include actions for water
15 quality management, habitat and species protection, and flood management. These continuing
16 actions could occur throughout the study area and are likely to affect cultural resources.
17 Construction could result in impacts on cultural resources, such as the construction of new buildings
18 and structures within the setting of existing resources, demolition of historical resources, and
19 ground-disturbing activities that could affect archaeological resources; however, these ongoing
20 projects, including construction and operations, are assumed to conform with CEQA.

21 **19.3.4.2 Cumulative Impacts of the Project Alternatives**

22 All project alternatives have the potential to cause a significant and unavoidable impact on cultural
23 resources. The Delta Conveyance Project, in combination with other project, plans, policies, and
24 programs identified in Table 19-7 that affect cultural resources, could result in a substantial
25 cumulatively significant impact on cultural resources.