

RECLAMATION

Managing Water in the West

Red Bluff Pumping Plant and Fish Screen - Project Management Plan

**Bureau of Reclamation - Tehama-Colusa Canal Authority
Mid-Pacific Region**



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1. Introduction and Background

1.1 Introduction to the Project Management Plan

The primary objective of the Project Management Plan (PMP) is to define clearly the roles, responsibilities, procedures, and processes that will result in the New Red Bluff Pumping Plant and Fish Screen Project (Project) being managed such that it is completed on time and within budget and satisfies the Project objectives.

The PMP is the document that establishes the procedures and processes for systematically implementing decisions regarding communication, coordination, direction, documentation, execution, and overall monitoring and control of the Project.

This PMP is a living document, designed as a tool for the entire Project team to actively use, throughout the duration of the Project. It is intended to be kept in a binder so that Team Members can have pertinent Project information in one place, which can be tailored to each team member's needs. Revised pages will add, modify, or delete information as the Project details are developed and elaborated through time. Details of the PMP shall be commensurate with the Project schedule, scope, and cost complexity at the point in time being considered. Any suggestions for changes or corrections need to be supplied to the Project Manager (PM) so the team can get timely updates.

The scope of the PMP includes all activities required to complete all aspects of the new Project and the management processes to be used during the various phases of the Project. The scope of the Project is detailed in Section 3.0. The PMP does not supersede any contracts and/or assistance agreements between the Reclamation and the Tehama-Colusa Canal Authority (TCCA), but should be considered as a supplement to them.

The Project Charter (Appendix L) is the baseline framework agreed to and signed off by the Executive Management Group (EMG) and is changed exclusively by the EMG per the terms of the Charter. The scope of the PMP must be within the limits established by the Charter. The PMP is a tool to track changes from the baseline scope, schedule and estimated cost of the Project.

1.2 Project Background

This section provides a summary of the Project history and alignment with Reclamation's mission. It provides a starting point for new team members to understand the basis for the Project.

1.2.1 History

The Red Bluff Diversion Dam, on the Sacramento River approximately 2 miles southeast of Red Bluff, California, diverts water from the Sacramento River to the Corning Canal and the Tehama-Colusa (TC) Canal. Completed in 1964, the dam is a concrete gated weir structure 5,985 feet in length, including the earthen wings. The dam enables the diversion of up to 2500 cubic feet per second of water by gravity for later delivery to approximately 150,000 acres of irrigated lands along the Interstate 5 corridor between Red Bluff and Willows, California. Diversions are made possible by closing eleven slide gates (referred to as “gates in”) located between piers spanning the length of the dam, causing Lake Red Bluff to form upstream of the dam. As the Lake water surface elevation rises to the canal invert elevation, diversions occur. The dam and canals were authorized as part of the Sacramento Canals Unit of the Central Valley Project (CVP), including the act of September 26, 1950 (64 Stat. 1036).

For more than 20 years following its completion, the dam was operated to provide year-round diversions. Due to fishery impacts—primarily the impediment to upstream and downstream passage by salmonids and the green sturgeon--the gravity diversion period has been reduced in several increments in the intervening years. At present, the gates are in during the four-month period spanning May 15 to September 15 of each year.

1.2.2 Fishery Concerns

The dam was originally equipped with fish ladders at both abutments designed to allow upstream migration of king salmon and steelhead for access to their spawning areas. Not long after its construction, however, concerns arose as to the possible impacts of the dam on salmon migration as the efficacy of the ladders came into question. By the late 1980's a multi-year, multi-agency team published a series of recommendations for remedial actions. Most were implemented before the passage of the CVPIA.

Fish species of concern that are presently affected by the dam operation include winter-run Chinook salmon, spring-run Chinook salmon, and green sturgeon. Sacramento River winter-run Chinook salmon were listed as threatened under the Endangered Species Act (ESA) in 1989, and their status was changed to endangered in 1994. Central Valley spring-run Chinook salmon were listed as threatened in 1999, and green sturgeon were listed as threatened in April of 2006. After winter-run Chinook salmon were listed, a 1993 Biological Opinion (BO) was released, requiring operational changes at the dam that remain in effect today.

Reclamation began researching alternative means to protect fish species while continuing to provide water deliveries to the canal. A Research Pumping Plant (RPP) was constructed in 1995 to test new fish-protection technology. Another pump was added in 2006, raising the total pumping capacity to 310 cubic feet per second. Due to the continued potential adverse impacts of dam operations to listed species, Reclamation began further analyzing alternative operational scenarios in the late 1990's. A draft EIS describing a pumping plant as an action alternative was published in 2002, but work on the draft was curtailed pending the outcome of the Operating Criteria and Plan (OCAP) ESA Section 7 consultation.

In December 2006, Reclamation re-released a Draft EIS, including a two-fold purpose and need statement:

- Substantially improve the long-term ability to reliably pass anadromous fish and other species of concern, both upstream and downstream, past RBDD.
- Substantially improve the long-term ability to reliably and cost-effectively move sufficient water into the TC Canal and Corning Canal systems to meet the needs of the water districts served by the Tehama-Colusa Canal Authority (TCCA).

Reclamation cited as its preferred alternative the construction of a pumping plant capable of pumping 2,180 cfs initially, but with a “footprint” allowing expansion to 2,500 cfs, the full capacity of the canal. The preferred alternative would reduce the “gates in” period to 2 months when the plant became operational.

Other means of improving fish passage at the RBDD were contemplated in the Draft EIS. Modifying the fish ladders were considered in some alternatives as well as constructing a bypass channel for fish passage. However, given the listing of green sturgeon (subsequent to the CVPIA) and recent evidence of adult sturgeon passage problems at RBDD, it was clear that passage for sturgeon as well as salmon had to be addressed. Ladder design for green sturgeon is still in the research stage, and at this point the fishery agencies have no evidence that sturgeon can effectively use ladders. Thus, there is unanimous agreement among resource agencies that operating the RBDD with the “gates out” during sturgeon migration is much more likely to result in improved fish passage.

1.2.3 Statutory Authority

1.2.3.1 1950 Act

The Act of 1950 reauthorized the Central Valley Project and included as an authorized feature the TC Canal (Section 21, Act of September 26, 1950, 64 Stat. 1036). Reclamation then constructed the Red Bluff Diversion Dam in conjunction with the TC Canal to meet the purposes of the 1950 Act. The sole purpose of the dam is to divert water into the TC and Corning canals to supply irrigation water. The dam has been fulfilling that purpose for over 40 years, and barring the imposition of operational constraints the facility could continue to fulfill its authorized purpose indefinitely.

However, as discussed above, since shortly after it was placed into operation, problems with fish passage through the dam have been observed. Questions regarding the efficacy of the fish ladders remain, and with the listing of additional species, alternative means to achieve the 1950 Act goals in a more effective manner are being sought. Construction of an additional pumping plant has been identified as the preferred alternative to do so. Section 2 of the 1950 Act does contemplate the need for alternative pumping plants, and leaves it to the discretion of the Secretary and the Commissioner to determine which facilities are necessary to meet the purposes of the Act.²

¹“The features herein authorized shall include an irrigation canal, generally known as the Tehama-Colusa Conduit, to be located on the west side of the Sacramento River and equipped with all necessary pumping plants and appurtenant works, beginning at the Sacramento River near Red Bluff, California, and extending...”

² I would cite the language of the 1950 Act that contemplates the additional pumping plants and the discretion.

1.2.3.2 Central Valley Project Improvement Act Section 3406(b)(10)³

As work on the draft EIS resumed in late 2006 and a pumping plant began to emerge as the only viable option to effectively address fish passage problems at the Red Bluff Diversion Dam, Reclamation resumed discussions on whether the Central Valley Project Improvement Act (CVPIA) Section 3406(b)(10) provided the statutory authority to construct, operate, and maintain the pumping plant. Reclamation sent a memorandum dated June 14, 2007 to the Assistant Regional

Solicitor asking this and several related questions, including the issue of whether or not a feasibility report would be required.

In his August 3, 2007 response, the Assistant Regional Solicitor cited Section 9(a) of the Reclamation Project Act of 1939 as requiring that a feasibility study would be required, based on his opinion that construction, operation, and maintenance of the pumping plant would constitute a “new supplemental work.” Then, citing the Federal Water Project Recreation Act of 1965, he opined that Reclamation may not engage in the preparation of the feasibility study until granted that express authority by the congress. The Assistant Field Solicitor later agreed, however, that the proposed pumping plant would not be a “new supplemental work” following Reclamation’s explanation that the pumping plant: 1) would not expand the purpose and use of the existing facilities in terms of quantity or timing of water deliveries and 2) would be a reserved works, similar to the Red Bluff Diversion Dam.

Paragraph 3406(b)(10) expressly authorizes the implementation of measures to address fish passage constraints at the Red Bluff diversion dam. Although paragraph 3406(b)(10) does not specifically authorize construction of a pumping plant, the section contemplates reimbursement of implementation costs in a manner similar to reimbursement of construction costs. The combination of the two authorities, the 1950 Act that provides for construction of additional pumping plants, and the authorization of measures to address fish passage constraints in the CVPIA, combine to provide authority to construct the pumping plant.

Further, as stated above, there exists a facility, authorized as a feature of the Central Valley Project, for the sole purpose of diverting water into the canal; no other facilities are necessary, and no supplemental works are contemplated. Because diversions may be accomplished with existing facilities, the sole reason to construct a pumping plant is to alleviate the passage impediment by providing an alternate means to convey the same water from the same source to the same delivery point as originally authorized.

Finally, while the Tehama-Colusa Canal is not currently used to deliver water to the Sacramento Valley National Wildlife Refuge complex (as mentioned in CVPIA Section 3406(b)(10)), some

³ “(10) Develop and implement measures to minimize fish passage problems for adult and juvenile anadromous fish at the Red Bluff Diversion Dam in a manner that provides for the use of associated Central Valley Project conveyance facilities for delivery of water to the Sacramento Valley National Wildlife Refuge complex in accordance with the requirements of subsection (d) of this section. Costs associated with implementation of this paragraph shall be reimbursed in accordance with the following formula: 37.5 percent shall be reimbursed as main project features, 37.5 percent shall be considered a nonreimbursable Federal expenditure, and 25 percent shall be paid by the State of California.”

changes in infrastructure could allow for future water deliveries to the refuge complex if existing delivery mechanisms (generally via the Glenn-Colusa Irrigation District canal) were interrupted or no longer available. This ability to potentially provide additional water supply reliability to the refuge complex would not be possible if the RBDD gates were out to improve fish passage and there was no alternative means to deliver water to the Tehama-Colusa Canal.

2. Project Authorizations

2.1 Reclamation

Reclamation's legislative authorities to participate in the Project are Section 2 of the Sacramento Valley Canals Act of September 26, 1950, 64 Stat. 1036 (1950 Act), in conjunction with the Central Valley Project Improvement Act of October 30, 1992, Public Law 102-575, (CVPIA) Section b (10), which authorizes and directs the Secretary to:

Develop and implement measures to minimize fish passage problems for adult and juvenile anadromous fish at the Red Bluff Diversion Dam in a manner that provides for the use of associated Central Valley Project conveyance facilities for delivery of water to the Sacramento Valley National Wildlife Refuge complex in accordance with the requirements of subsection (d) of this section. Costs associated with implementation of this paragraph shall be reimbursed in accordance with the following formula: 37.5 percent shall be reimbursed as main Project features, 37.5 percent shall be considered a non-reimbursable Federal expenditure, and 25 percent shall be paid by the State of California.

The existing Red Bluff Diversion Dam (RBDD) and appurtenant facilities are authorized by the 1950 Act. Section 3 of the 1950 Act requires the Secretary to "consult the local interests to be affected by the construction and operation," Section 4 of the 1950 Act enumerates the repayment of expenditures, and Section 5 of the 1950 Act requires the Secretary to submit to Congress both "a completed report and finding of feasibility under the provisions of the Federal reclamation laws" prior to an expenditure of funds for construction.

2.2. TCCA

The TCCA's authority to participate in this Project is established by the 1996 Amended Joint Powers Agreement.

2.3 Changes

If these authorities are changed or supplemented, for example by appropriation language, this section will be revised to reflect such changes.

3. Project Objectives and Scope

3.1 Project Objectives, Purpose, and Needs

The Project objectives are specific, clear, concise, measurable descriptions of why this Project is being executed, and the measure of success.

As stated in the Final April 2008 EIR/EIS the Project purpose and needs are to:

- “Substantially improve the long-term ability to reliably pass anadromous fish and other species of concern, both upstream and downstream, past RBDD [Red Bluff Diversion Dam].”
- “Substantially improve the long-term ability to reliably and cost-effectively move sufficient water into the TC Canal and Corning Canal systems to meet the needs of the water districts served by the TCCA.”

In addition, other objectives were agreed to between the TCCA and Reclamation:

- To fulfill the requirements of the Central Valley Project Improvement Act Section 3406(b)(10) (e.g. “Develop and implement measures to minimize fish passage problems for adult and juvenile anadromous fish at the Red Bluff Diversion Dam....”).
- To design and construct a pumping plant that will allow unimpeded fish passage at Red Bluff Diversion Dam by providing up to 2,500 cfs of water deliveries to the Tehama-Colusa and Corning Canals while the gates at Red Bluff Diversion Dam are maintained in the open position.
- To complete the Project as efficiently and economically as possible.

3.2 Project Scope

The Project scope statement identifies the deliverables required to meet the Project objectives.

The scope of this Project is to design and construct an on-river screened pump diversion facility to replace the function of the existing Red Bluff Diversion Dam/gravity diversion canal intake system. This pumping plant will convey water from the Sacramento River, via the fish screen and intake channel, through a discharge channel to the Tehama-Colusa Canal. The Red Bluff Diversion Dam is to be re-operated with gates open 12 months out of the year, in compliance with the June 2009 OCAP NOAA Fisheries Biological Opinion. This operation will essentially re-create a near free-flowing river condition for these 12 months. To achieve these objectives requires the design and construction of a pumping plant that will replace the existing gravity diversion and fish screening facilities that will be fully functional in a full range of hydraulic conditions created by the new operational regime of free-flowing river conditions. Fish screen

facilities must meet all resource agency criteria for listed endangered species and any proposed species that can be reasonably be expected to be listed in the foreseeable future.

The baseline scope of the Project is limited to the following Project features, as described in the Final ERI/EIS under Alternative 3. This is the baseline scope agreed to in the Charter from which any changes will be tracked:

- Flat plate fish screen, cleaning system, fish bypass pipes and pumps and protective debris boom that will be able to pass up to 2,500 cfs
- Intake channel and training walls
- Pumping plant designed to discharge up to 2,180 cfs (Revised during final design to 2,000 cfs) with provision for an additional 320 cfs (revised to 500 cfs) pumping capability to be installed at a later date (outside of the scope of this Project)
- Discharge conduit(s) and channels
- Electrical power supply
- Canal inlet transition
- Site work, access road, contaminated soil removal
- Appurtenant facilities
- Biological mitigation directly attributed to construction of the Project.

Secondary deliverables and activities to accomplish the above, such as procurement documents, the EIR/EIS, real estate deeds, and the like will be listed in the appropriate sections or appendices of the PMP and they are developed.

The scope does not include related on-going or future aquatic studies, any biological adaptive management studies, post construction operations and maintenance (though general operations and maintenance considerations and input shall be integral to the design process) or the like or other activities that have been carried out under CVPIA 3406(b) 10 to date that are not directly related to design and construction.

3.3 Changes to Project Scope

The Scope that was agreed to in the Project Charter, listed above, sets the baseline. Scope changes will be managed and documented through the Change Management Process, Section 7.0.

4. Roles and Responsibilities

4.1 Participating Agencies

The Project will be executed jointly by Reclamation and TCCA. These two agencies will be collectively referred to as the partners in the PMP. The partners have completed a Project Charter in the form of a Memoranda of Agreement, Appendix M, which defines the overall scope of work of the Project, how it will be managed, and the major roles and responsibilities. The Charter also establishes the Executive Management Group (EMG). Each entity will provide sufficient staff resources as described below to carry out its responsibilities for the Project.

Reclamation and the TCCA will each appoint a PM for the Project. The PM will lead the day-to-day development of the Project for which their agency is responsible. The PMs will coordinate closely on all aspects of the Project.

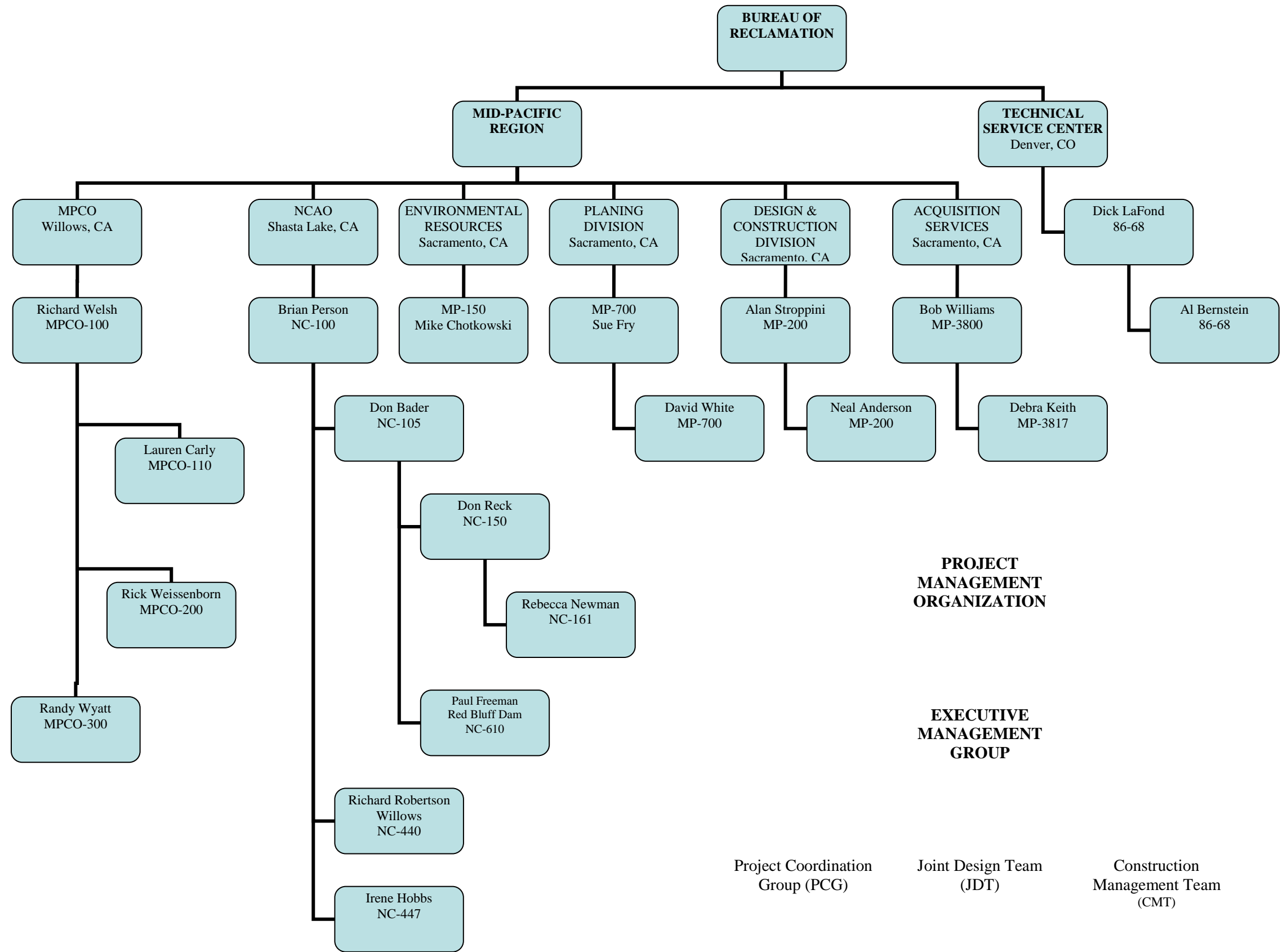
4.2 Organizational Breakdown Structure (OBS)

The Organizational Breakdown Structure (OBS), Figure 1, was developed so that Team Members can quickly identify the interagency and interagency relationships among Members, and to facilitate reviews and decisions. The OBS includes primary agency positions/individuals, their agencies, lines of authority (chains of command), and decision making. Relationships that are defined by contracts or agreements are also shown.

The OBS will be reviewed when any of the team lists are revised or new interagency agreements or authorities signed, and a revised copy will be distributed to each MP holder. A phone and address list is provided and will be updated as needed.

The OBS along with the phone and address list show the Project management organization and participants.

Figure 1 - Organizational Breakdown Structure



TEHAMA-COLUSA
CANAL AUTHORITY

BOARD OF DIRECTORS
Ken LaGrande, Chairman

General Manager
Jeff Sutton

NewField (consultant)
Mike Urkov

CH2M-Hill (consultant)
Pete Rude

**PROJECT
MANAGEMENT
ORGANIZATION**

**EXECUTIVE
MANAGEMENT
GROUP**

Project Coordination
Group (PCG)

Joint Design Team
(JDT)

Construction
Management Team
(CMT)

4.3 Phone and Address List

[insert excel file RB new PP phone address list here]

4.4 Project Management Organization

The Project Management Organization is shown in Figure 1. The management of the Project will be carried out by the following four Groups as shown in Figure 2.

- **Executive Management Group (EMG)**
- **Project Coordination Group (PCG)**
- **Joint Design Team (JDT)**
- **Construction Management Team (CMT)**

Other teams and Groups will be added as necessary.

4.4.1 Executive Management Group (EMG)

The EMG consists of top representatives from the TCCA and Reclamation who have major decision-making authority. The purpose of the EMG is to provide overall guidance throughout the Project, to ensure representatives from each organization follow the PMP, and to make decisions on the Project that cannot, due to lack of authority or lack of agreement, be made at the staff level. The PMs will jointly bring any issues to the EMG for consideration and decision.

The EMG will convene via conference call or in person approximately monthly during the initial stages of the Project, then as frequently as necessary during subsequent stages as determined by the EMG. The EMG provides overall management guidance; reviews major findings, conclusions, recommendations, budget and schedule changes, and progress; and makes all major decision regarding the Project.

4.4.1.1 Structure and Membership

The EMG shall consist of four Members, including a chairman. The Members shall be:

Reclamation: Area Manager, Northern California Area Office (Chair)

TCCA: General Manager

4.4.1.2 Decision Making and Documentation

The EMG is intended to promote cooperation and coordination between Reclamation and the TCCA and as such will make decisions and recommendations by consensus. The Chairman will be selected by the other Members. Decisions will include, but not be limited to, decisions on general direction, scope, budgets, and work assignments between the partners. Decision will be documented in writing. A suggested Decision and Documentation Paper is in Appendix I. EMG decisions will be reported to Team Members through periodic status reports, per the Communication Plan and logged into the Decision Log, found in the Change Control Section. EMG decisions will be final, unless modified by the EMG.

4.4.1.3 Dispute Resolution

If the EMG cannot agree, the Regional Director, Mid-Pacific Region and the Chairman of the Board of Directors, TCCA, will resolve issues to the maximum extent possible within their authority.

4.4.2 Project Coordination Group (PCG)

4.4.2.1 PMs

The TCCA and Reclamation will each appoint a lead PM. The PMs are the focal point and dissemination point for their agency for the flow of all information. The PMs are the primary point of contact with the EOG for briefings and status. The PMs jointly take policy issues to the EMG, agreeing to disagree, and provide their respective level member with the same minimum level of briefing on major policy decisions by the EMG.

The PMs will attend all Project team meetings, at their discretion, and carry the Project oversight for their agency. The PMs are responsible for resolving issues to the greatest extent possible that cannot be resolved by technical teams. The PMs lead the Project team.

4.4.2.2 Project Coordination Group

The TCCA and Reclamation's Technical Service Center (TSC), Northern California Area Office (NCAO), MP Construction Office (MPCO) and Mid-Pacific Regional office (MP Region) will each delegate at least one representative to the PCG, which will oversee the day-to-day activities within their responsibility. The representatives are responsible for participating on the PCG to report on their area of responsibility and coordinate activities related to their responsibilities. The initial PCG will consist of the following:

Organization	Name	Area of Responsibility
NCAO	Brian Person/Don Bader	Executive Sponsor
Technical Service Center	Al Bernstein/Dick LaFond	Reclamation Design Team
MP-200	Alan Stroppini	Partner Design Team coordinator
MP-700	David White/Ron Ganzfried	Planning Report
NCAO	Don Reck	Environmental Compliance
NCAO	Paul Freeman	On-site facilities
NCAO	Irene Hobbs/Heidi Schuchbauer	Real Estate
MPCO-110	Lauren Carly/Richard Welsh	Project Management
MP-3800	Bob Williams/Debra Keith/Dennis Perkins	Procurement
TCCA		Real Estate
TCCA/CH2m-Hill	Pete Rude	Engineering
TCCA/Newfields	Mike Urkov	Environmental Compliance/Permitting
TCCA	Jeff Sutton	Public Outreach

4.4.3 Joint Design Team (JDT)

The principal responsibility of the Joint Design Team is to design the Project and produce drawings and specifications that can be incorporated in a construction contract solicitation package. The Design Team will also provide for design consultation during construction. A Reclamation Design Team Leader will provide overall leadership for the team and primary interface with the PMs. The Design Team Leader will provide for the day-to-day management of the design effort.

The Design Team for the Project will be made of two sub-teams: one from the Reclamation Technical Service Center and one from the TCCA's consultant, CH2M-Hill (Consultant). The Regional Engineer will provide an inter-team coordinator to ensure consistency and compatibility between the sub-teams and among the JDT and the Reclamation procurement office..

Design Team Members are responsible for their sub-team's tasks, including schedules, budgets, and quality control. Team Members will ensure that their sub-team's products are complete, have been checked and peer reviewed, and will meet the objectives of this design.

[Insert JDT member table here when developed]

4.4.3.1 Reclamation Design Responsibilities

The TSC, in partnership with Reclamation's MP Region and NCAO, with review and input by TCCA and their Consultant, will prepare a final design for the pumping plant and appurtenances as described above, and the siphon under Red Bank creek.

4.4.3.2 TCCA Design Responsibilities

TCCA and its consultants will generally prepare a final design for the fish screen, pumping plant forbay and site work, as described above.

4.4.5 Construction Management Team (CMT)

This team will be constituted near the end of the design phase. It will be led by the Mid-Pacific Regional Construction Engineer and will consist of the typical Reclamation construction Team Members, such as a resident engineer, Design Team Leader, geotechnical leader, inspectors, a contract administrator, office engineer and an administrative contracting officer, and TCCA quality assurance representatives.

4.5 Initial Task Responsibilities

As agreed to at a meeting on April 8, 2008, between Brian Person, Reclamation; Jeff Sutton, TCCA; and Mike Urkov, NewFields, the following initial tasks will be carried out concurrently from the date of the April 8 meeting. This was agreed to so the start of design could be expedited and to further develop the working relationship between Reclamation and the TCCA.

- Complete the EIR/EIS, draft Record of Decision (ROD) and Notice of Decision (NOD) – Reclamation and TCCA as appropriate under State and Federal law.
- Initiation of permitting - TCCA
- Public outreach - TCCA
- Updating design data – TCCA and Reclamation
- Mapping and bathymetry surveys – Reclamation?
- Draft Project management plan - Reclamation
- Hydraulic modeling – Reclamation

If the partners are successful in initiating design, the initial Responsibility Assignment Matrix (RAM) is shown below. The detailed RAM is found in Appendix J.

Table 1 – Assignment of Primary Design and Construction Management Responsibilities

Task	Lead		Review	
	Reclamation	Canal Authority	Reclamation	Canal Authority
Project Management	√	√		
Design Data ⁴	√	√		
Land Acquisition ⁵		√	√	
Permitting ⁶		√	√	
Numeric & Physical Hydraulic Modeling of River, Screens, and Forebay	√			√
Coffer Dam		√	√	
Screen Design		√	√	
Fish Bypass System Design ⁷		√	√	
Debris Boom Design		√	√	
Forebay Design		√	√	
Discharge Conveyance & Outlet Struct. Design	√			
Site/Bridge Design, Demolition & Haz. Mat.		√	√	
Plant Design	√			√
Switchyard Design	√			√
Power Supply Design	√			√
Maint./Elect. Bldgs. Design	√			√
VE Study ⁸	√	√		
Specifications ⁹	√	√		
Cost Estimate	√		√	
Procurement	√			
Construction Mgmt.	√	√		

4 Design data gathering will be a well-coordinated joint effort, capitalizing on the data already acquired and involving both entities to assure their respective design responsibilities are effectively met.

5 The designation of the Canal Authority as lead is in recognition of the fact that they have already begun acquisition efforts. However, because the Project will be federally-owned, certain acquisition processes, such as appraisals, negotiations, etc., must be performed by Reclamation or under Reclamation's direct oversight and involvement

6 Reclamation recognizes that the Canal Authority has already studied the site, and that the unpermitted landfill may pose unique and high risk Project permitting issues.

7 If deemed necessary after consultation with NOAA Fisheries.

8 A Value Engineering Study will be required for a Project of this cost and scope.

9 The CSI specifications format will be used by all designers on this Project.

4.6 Contracts and Agreements

Appendix B provides the procurement plan. This section summarizes roles and responsibilities agreed to in any agreements or contracts. The following procurements could be needed for this Project, as listed at the time of the initial PMP (July 2008):

- Cost sharing agreement between Reclamation and TCCA for the Project
- Real estate agreements with each owner
- Bathymetric surveys
- Design resources
- Supply contract for cofferdam sheet pile
- Hazardous material cleanup
- Construction contract for initial site work
- Construction contract for fish screen and forebay
- Construction contract for pumping plant
- Final construction contract for site completion.
- Others defined as the Project progresses

5. Schedule

5.1 Baseline Schedule and Initial Milestones

A Baseline Schedule will be agreed to by TCCA and Reclamation. Once agreed, the Project progress will be measured against that schedule. As the Project progresses, it may later be prudent to establish another baseline to serve as a datum at the beginning of the construction phase. The EMG will decide on resetting any baseline schedules. The Project Charter recognizes that a reasonable target total Project Completion date is May 15, 2013, including 12 months of management reserve for unforeseen delays. It is recognized that the target for completing a functional pumping plant is May 15, 2012, the start of the irrigation season.

An additional 12 months will be included in the Baseline Project schedule as a management reserve for unforeseen critical path efforts. Any time extensions that affect the critical path must first be approved by the EMG, per the Change Control Plan. A summary of the major phases agreed to in the Project Charter are:

- Phase 1: Design Data
- Phase 2: Final Design
- Phase 3: Procurement
- Phase 4: Construction
- Phase 5: Project Closeout

Major milestones that establish the Baseline Schedule for the fish screen and the pumping plant are:

Kick-Off Meeting

Start – Hydraulic Modeling, Fish Screen, and Pumping Plant

Complete Design Data and Provide to Designers

Start – Final Design, Fish Screen and Pumping Plant

30% Design Meeting, Fish Screen and Pumping Plant

Quantities, Fish Screen and Pumping Plant

Construction Cost Estimate, Fish Screen and Pumping Plant

60% Design Meeting, Fish Screen and Pumping Plant

90% Design Meeting, Fish Screen and Pumping Plant

Final Design Submittal (SpecB) for Procurement, Fish Screen and Pumping Plant

Procurement Phase, Fish Screen and Pumping Plant

Solicitation Out for Bids:

Bids Received:

Award:

Notice to Proceed, Fish Screen and Pumping Plant

Substantially Complete, Fish Screen and Pumping Plant

Final Project Closeout Complete

[Detailed Project baseline schedule and milestone summary table here]

5.2 Schedule Updates

The PMs will monitor progress and will update the schedule to show the current status of the Project monthly. Other Members of the Project Coordination Group will be responsible for providing input to the PM.

Updates will be distributed per the Communication Plan.

6. Cost Tracking Plan

6.1 Cost Authorities

Funds expended on the Project will be charged to the appropriate cost authority, shown on the cost authority register, shown on the next page.

The cost authorities will only be changed by the Reclamation PM or the NCAO Area Manager. Inappropriate charges made to these cost authorities will be reversed.

6.2 Budgets

A total Project baseline budget will be agreed to by the partners early in the Project. A management contingency reserve of 25 percent will also be agreed to and included in the estimated total Project cost to manage unforeseen changes and risks to the Project. The management reserve will be over and above normal contingencies included in construction contract cost estimates. Annual budgets will be based on the Federal fiscal year, which is from October 1 to September 30. The management reserve will be reduced appropriately as the design level of detail is increased, and as project risks are diminished through progressive elaboration of the project details.

The PMs are responsible for overall management of the Project budget. The Members of the Project Coordination Group are responsible for developing and managing their budgets and reporting Projected surpluses or deficits upon expenditure of 80 percent of their annual budgets, or by July 15 each year, which ever comes first. Any surpluses will be rolled over into the management reserve or reduced appropriately.

For the purpose of estimating the Total Project Cost, the start date for tracking costs will be October 1, 2007 (FY-2008).

Budgets will be broken down into the following cost categories:

- Project Management
- Environmental Compliance, including obtaining permits and mitigation
- Real Estate, including all preliminary work leading to any real estate agreement
- Public Affairs
- Design Data Collection
- Engineering and Design
- Procurement
- Construction Management
- Consultants and Non-Construction Contracts and Agreements
- Construction Contracts

The following tables show the summary Total Project Budget and Cost Tracking sheet, and a sample Annual Budget and Cost Tracking sheet.

[Insert Excel spread sheets here – One file – 3 pages showing the cost authority index; One file of the total project budget; and the FY098 spread sheet as a sample for the detailed FY breakdown.]

6.3 Funding

Per the CVPIA authorization, Reclamation will fund at least \$75 million or, 37.5 percent of the total project cost, subject to appropriations approved by Congress and the President, based on the baseline cost estimate of \$200 million total project costs..

TCCA will fund up to \$75 million or, 37.5 percent of the costs, as their ability to repay capital improvements allows.

The State of California, or other non-Federal interests will fund up to \$50 million or, 25 percent of the costs, subject to appropriations by the state legislature and signed by the Governor.

During the closeout process, the partners will reconcile their allowable costs and a final accounting will be made, per the SCAMPI agreement between the State of California and the U.S. Department of Interior. Funding will be provided via task orders to the SCAMPI agreement.

6.4 Cost Tracking

Costs assigned to the Project will be tracked quarterly by the PMs. The Members of the Project Coordination Group are responsible for developing and managing their budgets and reporting Projected surpluses or deficits upon expenditure of 80 percent of their annual budgets, or by July 15 each year, whichever comes first. Any surpluses will be rolled over into the management reserve.

The PMs will have the authority to grant additional funds from the management reserve up in any Federal fiscal year. The PMs will have the discretion to refer requests for budget changes to the EMG. The EMG will approve additional expenditures above the PM's authority, per the Change Control Plan.

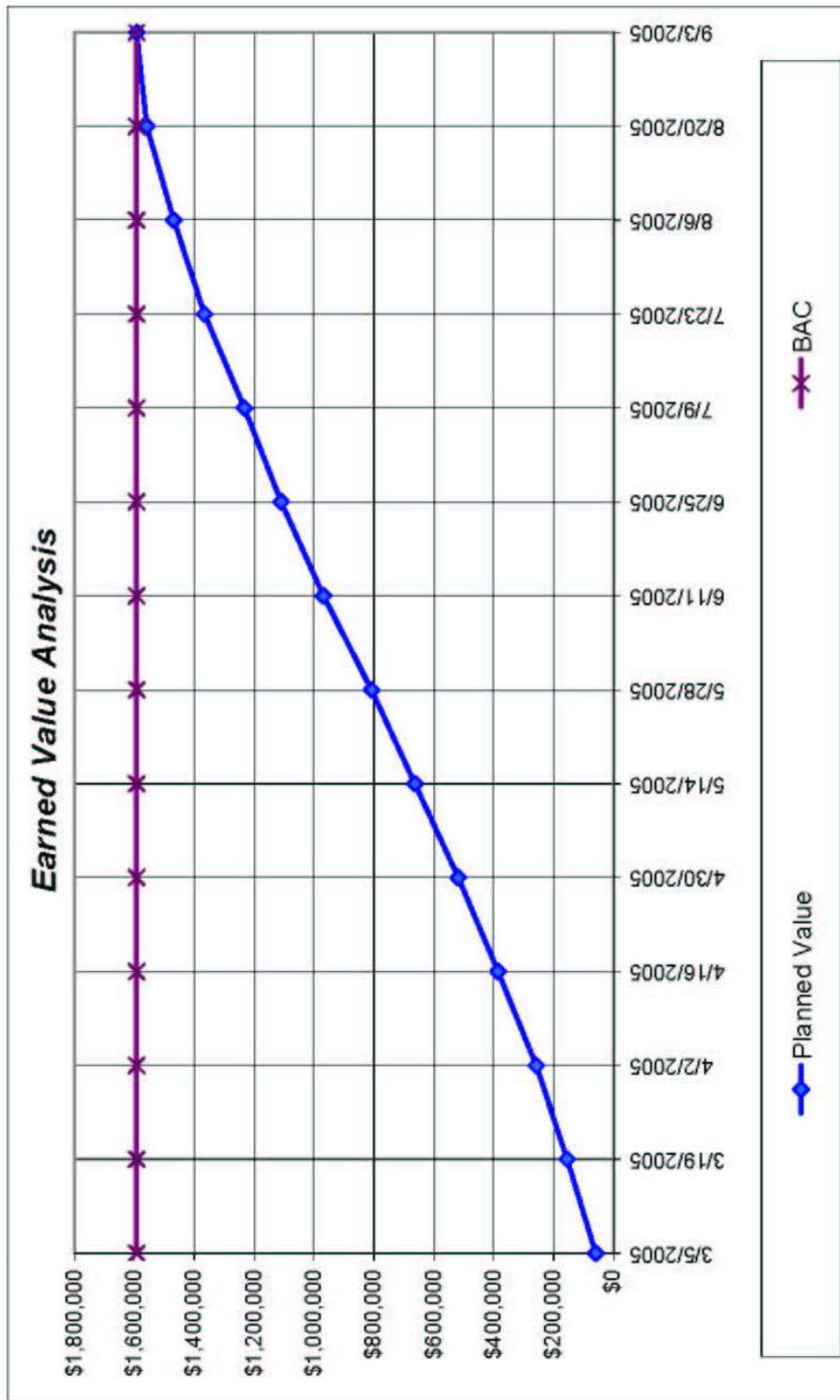
Cost status will be reported to the EMG and PCT quarterly, per the Communication Plan.

Each year, after the end of the previous fiscal year costs are made final, the PM will revise the total Project cost-tracking spreadsheet by replacing the budgeted costs with the actual costs. A copy of the revised spread sheet will be provided to the EMG and the PCG. Any adjustments in budgets, and commensurate schedule items, will be made at the same time. The tracking will also report where each agency is regarding to their cost sharing requirements per the CVPIA Authorization.

The PMs and EMG may elect to include an Earned Value Analysis as part of the monthly reporting. An example of the Earned Value Analysis is shown below. The graph shows actual cost versus Schedule Budget Plan against which the Earned Value will be measured. The Earned Value report will indicate whether the Project is "on budget" and "on schedule" each month, in addition to other input such as a narrative report and photographs.

For financial tracking purposes, tasks are grouped by the assigned Group performing the work. Each task is allocated staff days based on estimates as finalized in the scope section of this document. Earned Value Analysis will be performed by each Group on a monthly basis and delivered to each Project team member and design Group Manager four days following the end of the month. Each Group will assess the status of their Earned Value report and provide comments to the Team Leader. This report, with appropriate comments, will be sent to NCAO and TCCA fourteen (14) days after the end of each month.

GRAPH OF EVA (EARNED VALUE ANALYSIS)



6.5 Budget Documents

Reclamation will budget for funds according to its regular budgeting process. *f*

7. Risk Management Plan

The partners will mutually analyze the risks to the Project and develop a risk management plan. A risk register, shown below, will be kept by the PMs and reviewed and updated monthly.

7.1 Introduction

7.1.1 Introduction

Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on the schedule, cost, scope and/or quality of a Project. When it comes to risk management “the best defense is a strong offense” while being prepared to take advantage of any beneficial opportunities.

7.1.2 Purpose

The purpose of this risk management plan is to identify risks to the Project in such a time that the risk can be analyzed, evaluated and prioritized and risk response planning can be completed before a risk impacts the Project. Risk response planning is developing options and actions to enhance opportunities and to reduce threats to Project objectives. A second purpose of this plan is to provide a means to document risk management activities, particularly the implementing of a response to a risk.

7.1.3 Scope

The scope of this RMP is not intended to describe all of the risks up front. Risk identification and analysis will be a continuous activity. As the Project details are elaborated, additional risks will be identified and analyzed.

7.2 Roles and Responsibilities

7.2.1 PM

The PM for the Project has overall responsibility for overseeing risk management. The PM is responsible for maintaining and revising the RMP. The PM may arrange for an independent risk management audit if approved by the EMG.

7.2.2 Project Team Members

Each Team Member is responsible for identifying, reporting, and helping to characterize risks. Team Members are also responsible for implementing risk mitigation measures, as assigned.

7.2.3 Authorities

See the procedures for levels of authority for implementing risk mitigation actions.

7.3 Procedures

7.3.1 Risk Identification

Risk identification is an integral part of the progressive elaborative nature of the development of a Project. It needs to be continuous throughout a Project. Use the risk register as a guide to the information needed to describe and log in a risk. As a minimum, describe the risk, and perform the qualitative analysis. The qualitative analysis helps prioritize risks for further action. As soon as a risk is identified at level 3 or 4, the PM must be notified.

7.3.2 Logging Risks in the Register

Team Members will log any risks identified throughout a Project in the risk register in coordination with the PM. As a minimum, time should be set aside to update this risk management plan at major milestones in a Project that define major phases. The risk register is a file in which risks can be easily organize and documented. Supplemental narrative analyses and risk mitigation measures for significant, complex risks are expected to be developed as the Project unfolds.

7.3.3 Risk Response and Authorities

The following positions have the authorities identified to implement responses to risks, based on the priority assigned:

Low – Team Member, with written (e-mail) communication documentation to the PM.

Medium – PM, with written communication to the EMG.

High – EMG

7.3.4 Risk Monitoring and Control

7.3.4.1 Reviews and revisions

The RMP shall be reviewed and revised at a minimum, quarterly. Particular attention shall be paid to the probability of a risk happening because of the time-sensitive nature of the impact a risk can have on the Project.

7.3.4.2 Independent Audit

An independent risk audit may be performed annually, as the discretion of the EMG. The PM will be responsible for resolving all exceptions identified in the audit.

7.3.5 Risk Documentation

This will be done through the Risk Register, with supplements and attachments.

8. Coordination and Communication Plan

Every effort will be made to keep the TCCA and Design Team Members informed as to the status of this Project throughout its implementation. The following meeting and report distribution will be followed:

8.1 Internal to the Project Team

8.1.1 Kick-Off Meeting

A kick-off meeting will be held in mid-May. The meeting will be attended by representatives from the TSC, MP Region, NCAO, TCCA, and the Consultant. The purpose of the meeting will be to:

- Review the Project Charter and PMP to ensure concurrence by all parties regarding:
 - Scope of Work
 - Schedule
 - Change Management Process
 - Communication Plan
 - Cost-Management Plan
 - Other plans included in the PMP
- Discuss the Project-specific design criteria and standards
- Discuss any design issues that are outstanding
- Discuss any design data issues

8.1.2 Design Team Meetings

The TSC Team Leader will conduct a pumping plant Design Team meeting on the first Friday of each month at 9 a.m. The meeting will be attended by each TSC Design Team member or their alternate. The meeting will have a standing agenda and will be held to approximately one hour. A separate meeting will be scheduled, as necessary, by individuals involved in any issue that requires more than the allotted time. Representatives from the MP Region, NCAO, and TCCA are encouraged to participate in this meeting via conference call or in person.

The TCCA Consultant will...

8.1.3 Biweekly Status Report

The TSC Team Leader (or his designated representative) shall provide a draft status report to the TSC Design Team Sponsor, the TSC Design Group Managers, and the Design Team Members by noon on the Thursday following the end of each pay period (every two weeks). The status will be reviewed by the Design Team at the Friday Design Team meeting, and any corrections made. The final status report will be sent to TSC Design Team Sponsor, the Design Group Managers, the Design Team Members, and to designated MP Region staff by COB on the following Monday. The status report will cover, at a minimum: actual accomplishments over the preceding month, planned accomplishments for the next month, unresolved issues (including identification of all items that

require action by non-TSC staff), earned value analysis, schedule adjustments, all change control forms for the reporting period, and the use of the contingency fund.

8.1.4 Biweekly Drawings Distribution

The TSC Team Leader will prepare a CD containing drawings and specifications paragraphs and will send a copy of this CD to selected staff at the MP Region, MPCO, NCAO, TCCA, and Consultant on a Biweekly basis. These CDs will be sent out on the last Friday of each pay period and will reflect all TSC drawings and specification paragraphs as of the last Wednesday of each pay period; they are essentially a “snapshot” in time of the work (drawings and paragraphs) performed to date. The MP Region, MPCO, NCAO, TCCA, and the Consultant shall review the information on these discs for “fatal flaws” and provide comments to MP Region Team Leader no later than the following Friday.

The MP Region Team Leader and the TSC Team Leader will review the comments and will coordinate the responses.

The TCCA Consultant will do the same for their portion of the design work.

8.1.5 Exchange of Technical Information during Design

Due to division of responsibilities and the requirement that the Project components remain on schedule, it is imperative that technical information is exchanged in a timely manner. To expedite this process, the following guidelines will be used:

1. For exchange of information that does not affect scope of work, budget, or schedule, Reclamation Design Staff and TCCA and Consultant Design Staff shall contact each other directly. The staff initiating the contact shall record a summary of items discussed on the form in Appendix E, transmit it to all participants for concurrence and retransmit it to all participants upon concurrence, with a "cc" to all PMT Members and the Consultant Project Manager.
2. For issues that may affect the scope of work, budget, or schedule the initiating party will contact their respective Team Leader who will in turn contact the TSC, NCAO, MP, and TCCA PMT Members, and the Consultant Project Manager. A meeting or conference call will be set up to discuss the issue.
3. The TSC Team Leader shall maintain a communications log, which will be included in the monthly status report and more frequently upon request.
4. Biweekly drawing exchange will occur among the Design Teams.

8.1.6 30% Design Meeting

For each major component (fish screen and pumping plant) a 30% Design Meeting will be held per the schedule shown in Schedule Section. The meeting will be attended by representatives from the TSC, MP Region, NCAO, TCCA, and the Consultant. At this time, the specifications activities will be about

30 percent complete, and formal concurrence through meeting notes is required. All viable concepts should be presented. A 30% Design Meeting package will be prepared containing typical plan and section drawings by both the TSC and TCCA and Consultant and distributed to all

participants one week before the meeting. Ancillary requirements such as any rights-of-way, agreements with utilities, electrical power suppliers, county road departments, and other involved agencies should be assessed, and schedules for remaining data collection and the design flags adjusted, as appropriate. At this meeting, all parties should agree on the concept and schedule before continuation of designs. Following is a checklist for the 30% Design Meeting:

1. Design data reviewed and request for outstanding data submitted
2. Geologic data reviewed and request for outstanding data submitted
3. Request for lab data submitted
4. Draft lab testing reports submitted and reviewed by Design Team
5. General plan/arrangement of concept alternatives
6. Revised Design Activity Plan
7. 30% Design Meeting notes

8.1.7 Construction Cost Estimate

At the end of each major design phase, Reclamation and the TCCA shall update the cost estimates for their allocated design effort. These cost estimates will be included into the Total Project Cost tracking sheet, which shall be presented to the EMG. Appropriate contingencies shall be used in each cost estimate to represent outstanding risks and unknowns.

During the procurement phase, the appropriate Design Team shall prepare an independent cost estimate to be used for each contract.

8.1.8 60% Design Meeting

A 60% Design Meeting will be held per the schedule shown in the Schedule Section. The meeting will be attended by representatives from the TSC, MP Region, NCAO, TCCA, and the Consultant. At this time, the specifications activities will be about 60 percent complete, and formal concurrence through meeting notes is required. At this meeting, participants will review the work and obtain concurrence that all the milestone requirements have been completed and the design stage is complete. A 60% Design Meeting package will be prepared containing all preliminary drawings by both the TSC and TCCA and Consultant and distributed to all participants one week before the meeting. Following is a checklist for the 60% Design Meeting:

1. Outstanding design data received
2. Lab testing completed and draft reports received
3. Preliminary drawings completed
4. Pay items for specifications and list of drawings completed
5. Updated geologic design data report prepared
6. Draft Technical Memorandums prepared (TMs)
7. Constructability review performed
8. Draft construction schedule(s) prepared
9. 60% Design Meeting notes

8.1.9 90% Design Meeting

A 90% Design Meeting will be held per the schedule shown in Schedule Section. The meeting will

be attended by representatives from the TSC, MP Region, NCAO, TCCA, and the Consultant. At this time, the specifications activities will be about 90 percent complete and formal concurrence through meeting notes is required. A 90% Design Meeting package containing all draft technical paragraphs and drawings signed through “technical approval” shall be provided to all participants at least one week before the meeting. This meeting will be the forum where final input and decisions are made resolving all issues. A thorough review of issues and changes will reduce the number and size of amendments. Significant changes to the solicitation/specifications should have a written explanation. If the specifications have extensive changes, the need for another review meeting will be determined and the Project budget and schedule will be readdressed to determine if adjustments are needed. Following is a checklist for the 90% Design Meeting:

1. Lab testing reports complete
2. Specification paragraphs and drawings signed through technical approval submitted to Consultant 2 weeks before meeting
3. Compiled draft specifications sent by Consultant for review 1 week before meeting
4. Technical memorandums finalized and approved
5. Quantities and bid schedules complete
6. Preliminary Statement of Interest (SOI) Package and initial screening criteria

8.1.10 Spec Book (SpecB)

After the 90% Design Meeting, the TSC and TCCA and Consultant will revise the draft specifications incorporating all agreed-upon changes. The drawings and technical paragraphs will be completed and signed through peer review. The composite final draft Design Summary with all final TMs will be completed.

Final quantities will be completed. Following is a SpecB checklist:

1. Final quantities completed
2. Final specifications completed and sent to TCCA and Consultant
3. Draft design summary complete

8.1.11 General Communication Plan

The Project Managers will monthly prepare a total Project status report. The report will be based on input from the leaders of the PCG. The report will be distributed to everyone on the Project that requests one. The monthly report will contain as a minimum a narrative describing changes from last month, significant issues and decisions, and, quarterly, a cost and schedule update.

8.2 Public Affairs Plan

[To be worked out between Reclamation and TCCA]

9. Change Control Plan

All changes to the Project scope will be documented by the PCG Team Leader on a Change Order Form (see Appendix I). A change in scope is defined as any change in work effort, products, or schedule from that documented in the Scope of Work Section, Schedule Section, and Cost Section of this document. Any change in scope will be addressed on the Change Order Form and approved by the appropriate PCG member and the PMs. If the effect is minor (3 staff days or less and no change to schedule milestones), then the Design Team will document the change on the Contingency Fund Request Form (Appendix I).

Many minor changes may eventually accumulate to a needed cost adjustment. If the change is major, the appropriate PCG member will notify the Project Manager of the estimated cost change as soon as practical and request approval and funding for the change using the Change Management Form (Appendix I). If 80 percent of the contingency fund has been exhausted or if the planned SpecB milestone date will be delayed, a change will be requested using this form. All changes to Scope will be documented using either the Contingency Fund Request Form or the Change Order Form.

Joint Design Team Members will continually track their costs. The Team Leader will report these costs on a biweekly basis. If the EVA indicates that the Joint Design Team's estimate for completing the work is either behind schedule or over budget, the Team Leader, Design Group Team member(s), and Design Group Manager(s) will discuss the situation. If it is concluded that the analysis is accurate, then the Team Leader will inform the Project Manager of the problem and its cause.

If changes to the Project scope, schedule and/or costs are significant, the Project Managers shall present the issue and alternate courses of action, with risks and trade offs to the EMG, using the decision documentation form in Appendix I. The EMG decisions on Project changes shall be final and implemented by the PCG.

