San Joaquin River Restoration Program

Implementing the

Stipulation of Settlement

in

NATURAL RESOURCES DEFENSE COUNCIL, et al.,

v.

KIRK RODGERS, UNITED STATES BUREAU OF RECLAMATION, et al.

Case No. S-88-1658-LKK/GGH

UNITED STATES DISTRICT COURT

Program Management Plan

May 1, 2007

This document is in response to the Stipulation of Settlement (Settlement) in Natural Resources Defense Council, et al., v. Kirk Rodgers, et al., which was approved by the Court in October 2006. This Program Management Plan (PMP) for the San Joaquin River Restoration Program is intended to describe the approach to implementing the Settlement and is not intended to be inconsistent with, or alter the Settlement in any way. To the extent any inconsistencies exist, the Settlement will be the controlling document.

The PMP represents both the framework and strategy that the Implementing Agencies commit to use in collaboratively and adaptively implementing the Program. The undersigned recognize and expect that this strategy will change over time, as new information and data is collected, but commit to working together collaboratively to implement the Program.

The Program is intended to implement the Settlement in a manner consistent with applicable state and federal law. The Implementing Agencies recognize that nothing in the PMP commits the agencies to actions outside their authority. The agencies further recognize that the expenditure or advance of any money or the performance of any action in this PMP by the United States shall be contingent upon appropriation or allotments of funds in accordance with 31 U.S.C. §1341 (Anti-Deficiency Act). No liability shall accrue to the United States for failure to perform any action under this PMP in the event that funds are not appropriated or allotted. Likewise, any action to be undertaken by the State of California pursuant to the PMP is subject to the availability of appropriated funds. No liability shall accrue to the State of California for failure to perform any activity under this PMP in the event that funds are not appropriated.

In consideration of the foregoing, the undersigned support the use of the framework and strategy described in this PMP to begin implementation of the San Joaquin River Restoration Program. This document may be signed in counterparts.

Kirk C. Rodgers, Director, Mid Pacific Region
U.S. Bureau of Reclamation

May 10, 2007
Date

Steve Thompson, Manager, California/Nevada Operations
U.S. Fish and Wildlife Service

MAY 10/2007
Date

Rodney R McInnis

5-15-07

Rodney McInnis, Regional Administrator
National Marine Fisheries Service

Date

5-23-07

Lester A. Snow, Director,
California Department of Water Resources

Date

MAY 8, 2007

Ryan Broddrick, Director,
California Department of Fish and Game

Date

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ACCRONYMS, INITIALISMS, AND ABBREVIATIONS

APE	Area of Project Effect
BA	Biological Assessment
BDR	Biological Data Report
BO	Biological Opinion
CALSIM	California Water Resources Simulation Model
CDEC	California Data Exchange Center
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historic Resources Inventory System
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVPM	Central Valley Production Model
CWA	Clean Water Act
DFG	Department of Fish and Game
DO	Dissolved Oxygen
DOJ	Department of Justice
DWR	Department of Water Resources
EIR	Environmental Impact Report
ESA	Endangered Species Act
EWA	Environmental Water Account
FD	Friant Division
FMP	Fishery Management Plan
FMW	Fishery Management Work Group
FWUA	Friant Water Users Authority
IPAR	Initial Program Alternatives Report
GIS	Geographic Information System
HCP	Habitat Conservation Plan
HEP	Habitat Evaluation Procedures
HRSWCD	Hood River Soil and Water Conservation District
MOU	Memorandum of Understanding
NAHC	Native American Heritage Commission
NCCP	National Communities Conservation Plan
NED	National Economic Development
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Services
NOI/NOP	Notice of Intent/Notice of Preparation
NRDC	Natural Resources Defense Council
OSE	Other Social Effects
P&G	Federal Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies
PED	Pre-Construction Engineering Design

PEIS/R	Programmatic Environmental Impact Statement/Environmental Impact Report
PMP	Program Management Plan
PMT	Program Management Team
PSIT	Puget Sound Indian Tribes
RA	Restoration Administrator
RED	Regional Economic Development
RFP	Request for Proposal
ROD	Record of Decision
ROE	Right of Entry
RRA	Reclamation Reform Act
RWA	Recovered Water Account
SHPO	State Historic Preservation Office
SJR	San Joaquin River
SJRB	San Joaquin River Basin
SJRRP	San Joaquin River Restoration Program
SJV Index	San Joaquin Valley Index
SWP	State Water Project
TAC	Technical Advisory Committee
TM	Technical Memorandum
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WAP	Water Acquisition Program
WDFW	Washington Department of Fish and Wildlife
WMG	Water Management Work Group

1.0 INTRODUCTION

This document is in response to the Stipulation of Settlement (Settlement) in Natural Resources Defense Council, et al., v. Kirk Rodgers, et al., which was approved by the Court in October 2006. This Program Management Plan (PMP) for the San Joaquin River Restoration Program is intended to describe the approach to implementing the Settlement and is not intended to be inconsistent with, or alter the Settlement in any way. To the extent any inconsistencies exist, the Settlement will be the controlling document. A copy of the Settlement is included as an attachment to this PMP (Attachment A).

1.1 The Settlement and Settling Parties

In 1988, a coalition of environmental groups, led by Natural Resources Defense Council (NRDC), filed a lawsuit challenging the renewal of the long-term water service contracts between the United States and the Central Valley Project, Friant Division contractors. After more than 18 years of litigation of this lawsuit, known as Natural Resources Defense Council, et al., v. Kirk Rodgers, et al., a Settlement was reached. On September 13, 2006, the Settling Parties reached agreement on the terms and conditions of the Settlement which was subsequently approved by the Court on October 23, 2006. The "Settling Parties" include the NRDC, Friant Water Users Authority (FWUA), and the Departments of the Interior and Commerce.

1.2 Goals of the Settlement

The Settlement is based on two parallel Goals:

- To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish (Restoration Goal); and

- To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement (Water Management Goal).

The Parties acknowledge that the accomplishment of those Goals requires the performance of certain activities, such as environmental review, design, and construction, the details of which will be developed subsequently under the terms of this Settlement. Specifically, the Settlement calls for a combination of channel and structural improvements along the San Joaquin River below Friant Dam, and releases of additional water from Friant Dam to the confluence of the Merced River and planning, implementation, and funding measures to meet the Settlement Goals.

1.3 Implementing Agencies and the San Joaquin River Restoration Program

The Settlement states that the Secretary of the Interior (Secretary, unless otherwise noted) will implement the terms and conditions of the Settlement. Additionally, the Settling

Parties agreed that implementation of the Settlement will also require participation of the State of California (State). Therefore, concurrent with the execution of the Settlement, the Settling Parties entered into a Memorandum of Understanding (MOU) with the State of California (by and through the California Resources Agency, the Department of Water Resources (DWR), the Department of Fish and Game (DFG), and the California Environmental Protection Agency) regarding the State's role in the implementation of the Settlement. The program established to implement the Settlement will be called the San Joaquin River Restoration Program (Program), and the "implementing agencies" responsible for the management of the Program include United States Bureau of Reclamation (Reclamation), United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), DWR, and DFG.

1.4 Program Management Plan

Since the Settlement was approved by the Court, the Department of the Interior (Interior), through Reclamation and the USFWS, has been working with the other Settling Parties, the State of California, affected Third Parties (discussed below), and other Federal agencies regarding the implementation process and other related matters, including initial planning and environmental evaluations. The implementing agencies have organized a Program Management Team (PMT) and several Technical Work Groups to develop a plan for implementing the Settlement through a joint NEPA (National Environmental Policy Act) and CEQA (California Environmental Quality Act) process.

This PMP describes the approach the implementing agencies will be using to implement the Settlement. Included in the approach are some overarching Program strategies that will guide the implementation process, an initial organizational structure, specific activities to be accomplished, schedule and major milestones, and a Public Involvement Plan. Initially, the PMP will help serve three primary purposes: 1) to help guide the implementing agencies as they organize and staff necessary Work Groups; 2) to inform the other Settling Parties and the public of the process the implementing agencies intend to follow to implement the Settlement; and 3) to help assure that all of the terms of the Settlement are addressed and successfully implemented. Once the implementing agencies have acquired and organized the necessary Work Groups and have received input on this PMP from the other Settling Parties and the public, this PMP may be revised and/or expanded. It is important to note that in the future, the strategies and processes set forth in this PMP will adapt and may expand over time, as more information is gathered about the implementation process as it relates to the two Goals outlined in the Settlement.

1.5 Program Strategies and Principles

As described above, the implementing agencies are jointly implementing the Program. The implementing agencies have committed to the following implementing principles that define the program approach.

1.5.1 Programmatic Evaluation

Consistent with NEPA and CEQA, the Program will complete a programmatic evaluation of alternatives and actions to implement the Settlement, resulting in development of a Programmatic Environmental Impact Statement/Report (PEIS/R), a Record of Decision (ROD) and a Notice of Determination (NOD). This programmatic NEPA/CEQA evaluation will include a complete, system-wide analysis of alternatives designed to meet both the Restoration Goal and the Water Management Goal prior to implementing any new site-specific actions. This level of analysis should assure evaluation and identification of beneficial and adverse impacts of all alternatives. In order to expedite implementation, it is likely that several site-specific activities will be evaluated in the programmatic NEPA/CEQA document. Reference to Program planning, evaluation, and implementation in this document assumes it will be carried out within the NEPA/CEQA process and be consistent with those regulations.

1.5.2 Complementary State Programs

As the programmatic NEPA/CEQA document is being developed, the Program will integrate State activities, project planning, and projects that are complementary to planning and implementation of the Settlement goals and consistent with the State MOU. Identification of State activities and the integration of appropriate State programs will occur at all appropriate levels described in Figure 1.

1.5.3 Stakeholder and Public Involvement

The implementing agencies are committed to an open and transparent planning and implementation process to ensure participation by interested and affected stakeholders, including Settling Parties, Third Parties, land and facility owners, elected officials, business and community interests, special interest groups, and other community members and the general public. The participation approaches and techniques are summarized in this PMP and described in more detail in the Public Involvement Plan (PIP) (Attachment G).

1.5.4 Alternatives Formulation

The Program will implement an alternatives development and screening process to consider all reasonable options for implementing the actions and achieving the Goals defined in the Settlement. The results of the alternatives formulation process will be documented in an Initial Program Alternatives Report as part of the programmatic environmental documentation consistent with NEPA and CEQA.

1.5.5 Integration of Restoration and Water Management Actions

During the alternatives formulation process for the PEIS/R, the Program intends that complete alternatives will ultimately include actions to meet both the Restoration Goal and the Water Management Goal. The primary reason for taking this approach is that

evaluating actions for each goal separately may not accurately represent the likely effects of implementing the Settlement as a whole. This approach will need to be revisited again early in the alternatives formulation process to determine if it is still appropriate.

1.5.6 Technical Implementation

The PMT has established four Technical Work Groups to facilitate and coordinate the significant technical work activities required to implement the Settlement. The Work Groups include representatives of the five implementing agencies and will be coordinated through the Program Manager. The Work Groups are Water Management, Fishery Management, Engineering and Design, and Environmental Compliance and Permitting.

1.5.7 Funding Strategies

Program funding is anticipated from several sources. Although several of these sources of funding have been identified along with a target for the total amount to be made available (see Section 5.2 Funding Sources), the amount and timing of funding on a year-to-year basis may vary considerably. Because of this variability, the State and Federal agencies will coordinate activities and budgets closely in order to ensure that priority Program actions are not delayed and that work is allowed to continue uninterrupted. The strategy will include budget and performance tracking to document contributions and provide accountability.

1.5.8 Program Performance

The Program will develop program-level objectives, targets, and metrics to assess progress during both planning and implementation. The PMT will report regularly on these performance metrics and Program accomplishments.

1.5.9 Adaptive Management

The Program will develop processes for adaptively managing implementation actions, recognizing that over the term of the Settlement unexpected occurrences may require adaptive approaches to achieve the Restoration Goal and Water Management Goal. These processes will address the requirements under the Government Performance and Results Act. An adaptive management strategy manages the river to ensure that the Program's Goals are achieved while simultaneously learning from all restoration and flow management actions. This increase in knowledge allows natural resource managers and the decision-makers to evaluate Program actions and address key uncertainties. As new information is obtained, Program actions will be revised or redesigned to improve effectiveness and efficiency. This learning process will be continuous to allow management to evolve as the ecosystem responds to Program, regulatory, and administrative actions throughout the watershed.

Although site-specific protocols will be designed for each major activity, the following general protocol describes the main objectives of what will occur:

1. Monitor and model the system in terms of current understanding and speculation about system dynamics based on sound science;

2. Design the management actions to maximize the conservation and information benefits;

3. Implement actions with a cautious experimental approach and monitor the system response;

4. Update alternative hypotheses, and adjust management action; and

5. Design new interventions based on improved understanding.

1.6 Stages of Implementation

The PMT has defined a three-stage implementation strategy. The three stages represent significant milestones in Program implementation and the beginning of each stage will likely represent an opportunity for the implementation strategies and Program staffing plans to be reviewed and updated. The following sections describe the activities that the Program will be focusing on during the three stages.

1.6.1 Stage 1 – Planning and Programmatic Evaluation

Stage 1 began with the approval of the Settlement and focuses on a programmatic planning and environmental review process that will include formulating and evaluating reasonable alternatives and identifying significant data needs and analyses required during Stage 2, as part of the NEPA/CEQA process. These efforts will provide the necessary information to start the draft programmatic PEIS/R scoping process. Among the actions that will take place during Stage 1:

- Formulation and evaluation of all channel and structural improvements needed in the San Joaquin River to meet the Restoration Goal;
- Development of a Fisheries Management Plan that will provide a roadmap to adaptively manage efforts to restore and maintain naturally-reproducing and self-sustaining populations of salmon and other fish in the San Joaquin River below Friant Dam to the confluence of the Merced River while considering life history stages significantly affected outside of this area and coordination with Water Management Goal actions;
- Development of the procedures and guidelines governing the release of water from Friant Dam to meet the Restoration Goal;
- Development of a water accounting system to account for net reductions in water deliveries to Friant contractors as a result of implementing the Settlement;
- Formulation and evaluation of all reasonable Water Management actions consistent with the requirement and limitations in Paragraph 16(a) of the Settlement to develop a plan for recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows for the purpose of reducing or

avoiding impacts to water deliveries to all of the Friant Division long-term contractors caused by the Interim Flows and Restoration Flows; and

- Development of an Interim Flow and monitoring program for immediate implementation in Stage 2.
- Planning, design and environmental compliance for other actions necessary for (a) completion of Paragraph 11 projects (e.g. evaluating fish screen efficacy, fish passage) and (b) Paragraph 12 projects that are appropriately advanced in Stage 1 actions.

Although these activities will be initiated separately at first, the relationships and dependencies between them are significant and will be closely coordinated. As such, it is anticipated that by the end of Stage 1, each of the activities will be integrated together in the programmatic environmental documents. Specific relationships and dependencies, as well as communication protocols will be described in a Program integration document.

Throughout Stage 1, technical memoranda and reports will be prepared and distributed to the public for review and comment on the analysis results and decisions made by the Program. In general, this stage will include a Programmatic NEPA/CEQA environmental review process, initial studies and consultations required for acquiring necessary permits, and "feasibility-level" engineering, designs, and cost estimates of the Program alternatives, concluding in September 2009 with the PEIS/R and a ROD/NOD.

1.6.2 Stage 2 – Initiation of Interim Flows, Salmon Reintroduction, and River Improvements

Immediately upon the initiation of Stage 2, Interim Flows from Friant Dam will be released into the San Joaquin River and monitoring programs will be implemented to begin facilitating the Restoration Goal. These releases will be made consistent with the Interim Flow and monitoring programs developed in Stage 1. Stage 2 will also include the completion of any required site-specific environmental review and documentation, detailed engineering and designs to initiate construction contracts, permitting, and real-estate acquisitions required for implementation. Spring-run and fall-run Chinook salmon will be reintroduced to the San Joaquin River by December 31, 2012. Stage 2 will conclude in December 2013 after all Phase 1 priority construction activities have been completed.

1.6.3 Stage 3 – Initiation of Restoration Flows

Stage 3 will begin with the full Restoration Flow releases from Friant Dam. This stage will also include construction of the remaining Program features that were not Phase 1 priority actions, and the operation and maintenance of project facilities. The stage will conclude in December 2025 when the Settlement expires; however, on-going operations and maintenance of facilities and structures will continue indefinitely.

1.7 Federal Authorization

Interior agencies are authorized to work on initial planning and environmental review activities under the Central Valley Project Improvement Act, P.L. 102-575, Title XXXIV. Without additional authorizing legislation, however, Interior agencies lack sufficient authority to implement all of the actions in the Settlement. As part of the Settlement, Exhibit A, draft Federal legislation was included to address this issue. On January 4, 2007, legislation entitled "The San Joaquin River Settlement Act," was reintroduced in both houses of Congress to authorize the Secretary to implement the Settlement. The authorizing legislation will likely provide specific direction and in some cases additional requirements to the Secretary and the Secretary of Commerce regarding certain areas of implementation. The Settling Parties have already committed to supporting the legislation in its current draft form and believe that it is consistent with the Settlement. It is intended that this PMP may be amended to fully address any requirements presented in the final legislation.

The Department of Commerce is authorized to implement the Settlement under the Anadromous Fish Conservation Act, 16 U.S.C. section 757a, et seq.

2.0 PROGRAM OVERVIEW

This Program Overview describes the Program participants and their responsibilities, the structure of the organization and how each participant relates to one another. It also describes river reaches, a summary of key actions in the Settlement, and a timeline of key Program milestones. Finally, the section summarizes assumptions and constraints of the proposed actions outlined in the Settlement.

2.1 Participants and Responsibilities

2.1.1 Settling Parties

As described in the introduction, the "Settling Parties" include the NRDC, FWUA, and the Departments of the Interior and Commerce.

2.1.2 State MOU

The State of California has committed its support of the Settlement by entering into a Memorandum of Understanding (State MOU) with the Settling Parties that outlines a collaborative role for the State in the planning, design, funding and implementation of the actions set forth in the Agreement. The general principles outlined in the State MOU are as follows:

- The State Agencies intend to assist the Settling Parties in implementation of the Settlement consistent with the State Agencies' authorities, resources and broader regional resource strategies.

- The Settling Parties intend to assist the State Agencies in their efforts to support the implementation of the Settlement, consistent with the terms and conditions of the Settlement.
- The State Agencies and the Settling Parties intend to work together collaboratively in the planning, design, funding and implementation of appropriate aspects of the Settlement.

2.1.3 Implementing Agencies

The five implementing agencies responsible for the management of the Program are Reclamation, USFWS, NMFS, DWR, and DFG. Although Reclamation and USFWS are the Department of the Interior agencies representing the Secretary, who, in general, is responsible for implementing the Settlement, all five implementing agencies signed the State MOU, wherein all parties agreed to work together collaboratively to implement the Settlement. The implementing agencies will implement the terms of the Settlement, consistent with the State MOU, through the planning, design, funding, and implementation of the actions on the San Joaquin River called for by the Settlement. Each agency's expected role in implementing the Program is as follows:

- Bureau of Reclamation

Reclamation owns and operates Friant Dam as part of the Friant Division (FD) of the CVP and holds contracts with water agencies in the south San Joaquin Valley. Reclamation will serve as a lead NEPA agency in the implementation of the Settlement. Reclamation will be responsible for re-operating Friant Dam consistent with the Settlement and ensuring all related impacts are addressed appropriately. Reclamation will also be responsible for formulating and implementing all aspects of the Water Management Goal described in Paragraph 16 of the Settlement.

- Fish and Wildlife Service

USFWS will provide technical expertise and assistance in fish, wildlife, and associated habitat monitoring, management, and restoration; fish culture, reintroduction, and population supplementation; aquatic animal health assessment; instream flow management; and adaptive management strategies to assess the effectiveness of habitat restoration, population conservation, and flow management actions. The Settlement requires that USFWS submit a completed permit application to NMFS for the reintroduction of spring-run Chinook salmon, and that the Secretary, through the USFWS, ensure that spring- and fall-run Chinook salmon are reintroduced at the earliest practical date after commencement of sufficient flows. USFWS manages National Wildlife Refuge lands within and downstream of the section of the San Joaquin River covered by the Settlement, and some of the in-river and riparian restoration envisioned in the Settlement may occur on these lands. USFWS will coordinate with applicable Federal and State agencies under the Fish & Wildlife Coordination Act, Migratory Bird Treaty Act, Clean Water Act, Federal Power Act, and the Central Valley Project Improvement Act, and has regulatory responsibility under the Endangered Species Act (ESA).

- National Marine Fisheries Service (NMFS, also known as NOAA Fisheries Service)

NMFS is dedicated to the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems. As a steward, NMFS conserves, protects, and manages living marine resources in a way that ensures their continuation as functioning components of marine ecosystems, affords economic opportunities, and enhances the quality of life for the American public. This stewardship is implemented under several Federal Acts including: the Magnuson-Stevens Act, Federal Power Act, Endangered Species Act, Energy Policy Act, Coastal Wetlands Protection, Planning, and Restoration Act, Marine Mammal Protection Act, and Oil Pollution Act).

NMFS will provide technical expertise on fishery resources and habitat issues. NMFS must issue a decision on a USFWS permit application for the reintroduction of spring-run Chinook salmon as soon as practical but no later than April 30, 2012. The Secretary of Commerce consults with the Secretary of the Interior to ensure that spring- and fall-run Chinook salmon are reintroduced at the earliest practical date after commencement of sufficient flows and the issuance of all necessary permits.

- California Department of Water Resources

DWR will assist in various aspects of the planning, design, and construction of physical improvements identified in the Settlement, including projects related to flood protection, levee relocation, construction standards and maintenance, and modifications to, and maintenance of, channel facilities. This will include assisting with obtaining all necessary permits, designing and constructing facilities to provide for fish passage and to minimize fish entrainment, establishing appropriate riparian habitat, and identifying and implementing the best available science and monitoring so the system can be adaptively managed to better achieve the Goals and document results. DWR also intends to assist in various aspects of the implementation of the Water Management Goal identified in the Settlement.

- California Department of Fish and Game

DFG will assist in various aspects of the planning and design of activities, including providing technical assistance to the Settling Parties on actions related to the release of flows identified in the Settlement, the design and construction of facilities to provide for fish passage and to prevent fish entrainment as identified in the Settlement. DFG also will provide technical assistance in the manner of reintroducing, monitoring and evaluating fish in the main stem of the San Joaquin River, and establishing and maintaining appropriate riparian habitat. DFG is the permitting agency for State incidental take permits under CESA, the regulatory authority for the State Streambed Alteration Agreement process and other aspects of Fish and Game code. DFG must comply with CEQA in issuing a permit. DFG also owns land in the project area and is a member of the San Joaquin River Conservancy Board, which manages the San Joaquin Parkway.

2.1.4 Restoration Administrator

The Restoration Administrator (RA) is appointed by the Plaintiffs and the Friant Parties for a six-year term and provides recommendations to the Secretary regarding specific elements of the Settlement and certain issues related to the Restoration Goal. The RA also consults with the Technical Advisory Committee (TAC, described below) on topics including the following:

- How River Restoration hydrographs are to be implemented;
- When Buffer Flows (two releases of up to an additional 10% of the applicable hydrograph flows) may be needed;
- How river channel and fish passage improvements will be made;
- Reintroduction of salmon;
- Interim Flows for data collection purposes;
- Targets, goals and milestones for successful implementation of the fishery program; and
- Coordination of flows with downstream tributary fishery efforts.

The RA schedules and attends TAC meetings, coordinates or facilitates the completion and/or production of any TAC reports, receives and considers any recommendations of the TAC, and ensures that meetings of the TAC are open to agency staff assisting in Settlement implementation.

In addition to the relationship with the TAC, the RA makes recommendations to the Secretaries of the Interior and Commerce regarding stock selection, reintroduction strategies, and other significant decisions relating to reintroduction and management of restored Chinook salmon below Friant Dam. The RA, in coordination with the TAC, will provide an annual written report to the Settling Parties about the progress made over the previous calendar year in and responsibilities of the RA and the TAC are outlined in the Settlement.

2.1.5 Technical Advisory Committee

The TAC is established by the Friant Defendants and the Plaintiffs to assist the RA. The voting members include two representatives from both the Plaintiffs and the Friant Defendants and two mutually-agreed upon designees. Representatives from DWR and DFG participate as ex officio non-voting members. The Secretary of the Interior, or the Secretary of Commerce, as appropriate, shall designate staff from Reclamation, the USFWS, and the NMFS to act as liaisons to the TAC to ensure coordination and sharing of information between the TAC and the implementing agencies. The TAC assists and advises the RA regarding those areas outlined in the Settlement. TAC members have relevant technical or scientific background or expertise in fields related to river restoration or fishery restoration. Terms are for three years.

2.1.6 Cooperating Agencies (NEPA)

Reclamation will invite eligible governmental entities to participate as cooperating agencies for the development of the Programmatic Environmental Impact Statement/Environmental Impact Report (PEIS/R) in accordance with the requirements of NEPA and the Council of Environmental Quality regulations. Reclamation will also consider any requests by eligible governmental entities to participate as a cooperating agency, and will either accept or deny such requests. If such a request is denied, Reclamation will state in writing, within the PEIS/R, the reasons for such denial.

Throughout the development of the PEIS/R, Reclamation will collaborate, to the fullest extent practicable, with all cooperating agencies, concerning those issues relating to their jurisdiction and/or special expertise.

Collaboration goals are to:

- Identify issues to be addressed in the PEIS/R;
- Arrange for the collection and/or assembly of necessary resource, environmental, social, economic, and institutional data;
- Analyze data;
- Develop alternatives;
- Evaluate alternatives and estimate the effects of implementing each alternative; and
- Carry out any other task necessary for the development of the PEIS/R.

Reclamation and the eligible governmental entities will express in a MOU their respective roles, assignment of issues, schedules, and staff commitments in order to keep the NEPA process on track and within the time schedule.

2.1.7 Lead, Responsible and Trustee Agencies (CEQA)

CEQA requires that the Lead State Agency consult with, and request comments on the Draft PEIS/R from, all Responsible and Trustee Agencies, agencies with jurisdiction by law, and representatives from cities and counties adjacent to the project site. Notices typically involve transmittal of the Draft PEIS/R with a specific request for comments. Throughout the development of the PEIS/R, the Lead, Responsible and State Trustee Agencies will collaborate, to the fullest extent practicable, with Reclamation and all cooperating agencies, concerning those issues relating to their jurisdiction and/or special expertise.

Collaboration goals are to:

- Identify issues to be addressed in the PEIS/R;
- Arrange for the collection and/or assembly of necessary resource, environmental, social, economic, and institutional data;
- Analyze data;

- Develop alternatives;
- Evaluate alternatives and estimate the effects of implementing each alternative; and
- Carry out or administer any other task necessary for the development of the environmental impact report.

The Lead State Agency and the eligible governmental entities will express in a MOU their respective roles, assignment of issues, schedules, and staff commitments in order to keep the CEQA process on track and within the time schedule.

The State agencies intend to identify specific activities and the nature and level of assistance in future agreements, including CEQA compliance.

2.1.8 California Endangered Species Act

The California Endangered Species Act (CESA) is administered by DFG and prohibits the take of plant and animal species designated by the Fish and Game Commission as either threatened or endangered in the state of California. DFG will work as the State permitting authority and a cooperating agency to ensure protection of state listed species and compliance with CESA. If a State Incidental Take Permit is necessary, DFG must comply with CEQA in issuing a permit.

2.1.9 Third Party MOU

On February 26, 2007, Reclamation entered into a Memorandum of Understanding (Third Party MOU) with a group of Third Parties with downstream interests. This MOU acknowledges the interest of a group of identified Third Parties along the San Joaquin River in the implementation of the restoration and water management activities as well as in maintaining the agricultural economy of the region. This MOU also outlines this Third Parties' groups' collaborative role in the Settlement implementation process.

Consistent with the Third Party MOU, the Program Manager will use reasonable efforts under the circumstances to provide the Third Parties (through a Coordinating Committee established by the Third Parties) any recommendation by the Restoration Administrator to the Secretary or the Secretary's designee regarding a matter that is a subject of this MOU. Any comments from the Coordinating Committee to the Secretary or the Secretary's designee shall be provided in a timely manner.

2.1.10 Other Stakeholders and General Public

Other stakeholders and the general public will have opportunities to review and provide input to relevant program activities through the public participation program, the NEPA and CEQA process, and public notices and/or hearings required by various regulatory agencies. Additionally, the Settlement contemplates coordination with and/or appropriate input from landowners, long-term water contractors, additional stakeholders and the

general public. The approach to involve these participants is described in detail in the PIP (Attachment G)

2.2 Interagency Management Structure

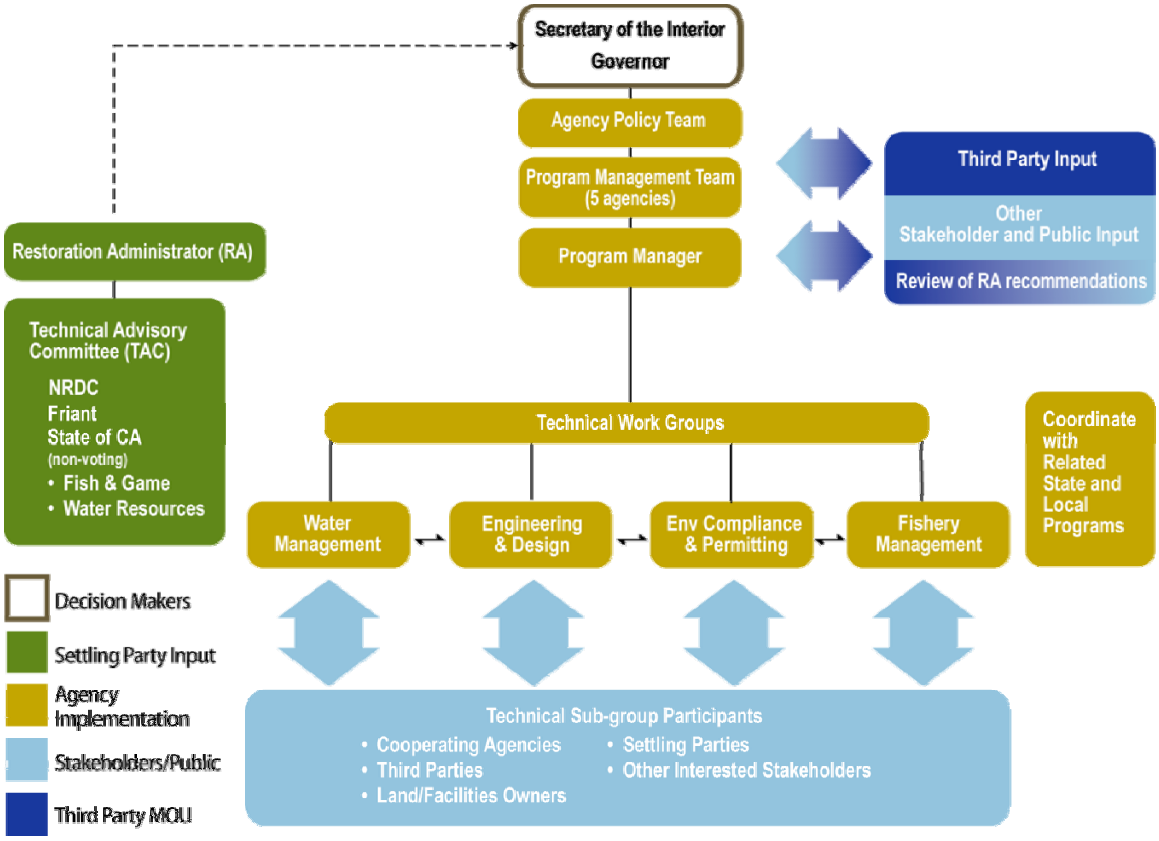
Figure 1 outlines the Program organization chart and demonstrates how the Program participants interact and receive and provide information. The Settlement specifically describes how the RA, the TAC, and the Secretary (or designee) are chosen and/or share information. The remaining elements of the diagram were completed after the State MOU was signed on September 13, 2006.

The Program consists of numerous projects, organizational levels, goals, objectives, deliverables, and substantial technical details requiring the development of a Program Integration Plan to define and control the schedule, performance, risks, communication, and roles of the various organizational elements. Overall, the goals of the Program Integration Plan will be to acquire efficient and effective integration between the numerous organization components. For example, all four of the Technical Work Groups will be working concurrently on guidance documents and various technical products that will rely on information from all four of the Technical Work Groups. In addition, it will be necessary for the Program to coordinate and communicate with external programs such as state and federal refuges and water operations and planning efforts and related and complementary State programs. Communication roles and processes for integration between and among these tasks will be described sufficiently to guide the integration in an effective and efficient manner.

2.2.1 Secretary of the Interior

The Secretary (or designee) directs and implements the terms and conditions of the Settlement in cooperation with the State of California, in an effort to achieve the Restoration Goal and the Water Management Goal.

Figure 1. Program Organizational Chart



2.2.2 Agency Policy Team

The Agency Policy Team (APT) consists of designees of the Secretary, Secretary of Commerce, and the California Resources Secretary. The Team advises the Secretary (or designee) and the Governor (or designee) and is kept informed of the Technical Work Groups' progress, as well as the progress of the RA and the TAC by the Program Management Team. The APT also resolves policy issues elevated by the Program Management Team.

2.2.3 Program Management Team

The Program Management Team (PMT) consists of managing representatives from the implementing agencies. The PMT oversees the implementation of the Settlement and that the Restoration Goal and the Water Management Goal are met. The Team oversees the work of the Technical Work Groups, ensures coordination among Work Groups, and provides guidance on policy issues elevated to the PMT by the Work Groups. The PMT

reports to the Secretary and the Agency Policy Team, and elevates unresolved policy issues to the APT.

2.2.4 Program Manager

The Program Manager manages Program implementation, coordinates and administers meetings of the PMT, reports progress and elevates issues to the PMT, coordinates activities of the Technical Work Groups, ensures integration among parallel activities, and coordinates with the RA and other advisory committees. The Program Manager is designated by the Secretary (or designee).

2.2.5 Technical Work Groups

The following four multi-agency Technical Work Groups are responsible for technical work required to meet the two Settlement Goals. Each of the Technical Work Groups includes representatives of the implementing agencies, as appropriate, to accomplish the activities related to each Group's responsibilities and each has a Team Leader that coordinates directly with the Program Manager.

The Technical Work Group representatives do not have the authority to make policy decisions on behalf of the implementing agencies. When and if policy decisions at the Work Group level are required that can not be resolved within the Work Group, the issue is elevated to the Program Manager for resolution or elevation to the PMT.

The activities from each Work Group are closely related to one another and in some cases overlap. Therefore, close coordination and integration are a critical component of Program implementation. Each Work Group will be responsible for the coordination, collaboration, and integration of their activities with the other Work Groups.

The following briefly describes the responsibilities of the four Technical Work Groups:

- Water Management Work Group

The Water Management Work Group will be responsible for completing technical analyses and making recommendations for the sections in the Settlement related to Water Management including meeting the Water Management Goal. Activities include 1) the development and implementation of a plan to recover water released for restoration purposes; 2) the development of guidelines for the procedures described in Paragraph 13(j) of the Settlement; 3) development of guidelines and procedures for the implementation of the Recovered Water Account and a water acquisition program; 4) installation of monitoring stations related to items 2 and 3 above; and 5) a process to analyze, monitor, and make decisions on the coordination of restoration flows with other eastside tributaries and other fishery restoration programs on the San Joaquin River.

- Engineering and Design Work Group

The Engineering and Design (E&D) Work Group will be responsible for completing all levels of engineering designs and cost estimates for all Program alternatives identified in

the formulation process, including alternatives to meet both the Water Management Goal and the Restoration Goal of the Settlement. Responsibilities will also include the collection of field data required for engineering designs, coordination with real estate specialists to access private lands, and the development of consistent design criteria to be used for all Program alternatives.

- Environmental Compliance, and Permitting Work Group

The primary responsibility of the Environmental Compliance, and Permitting Work Group is to ensure that all applicable environmental studies, permits, alternatives formulation, and other requirements are met in order to initiate construction activities. This Work Group will be responsible for formulating and evaluating Program alternatives based on the Program purpose and need and evaluation criteria. Once specific portions of an alternative have been formulated, this Work Group is responsible for developing a detailed project description for further environmental studies as well as engineering studies by the E&D Work Group.

- Fishery Management Work Group

The primary responsibility of the Fishery Management Work Group is to plan for and coordinate efforts to implement the sections in the Settlement related to meeting the Restoration Goal. Activities include: 1) developing a Fishery Management Plan designed to provide a roadmap to adaptively manage efforts to restore and maintain naturally reproducing and self-sustaining populations of salmon and other fish in the San Joaquin River below Friant Dam to the confluence of the Merced River; 2) providing information for the permitting process and documentation specific to Paragraph 14 of the Settlement; and 3) recommending and coordinating all fishery related planning, modeling, or research and monitoring necessary to inform efforts of the Water Management, Engineering and Design, and Environmental Compliance and Permitting Work Groups supporting implementation of the Restoration Goal and the Water Management Goal.

2.2.6 Technical Subgroups

Subgroups will be established to focus on specific technical aspects of the Settlement implementation. The make-up of each subgroup will typically include representatives from the four primary Work Groups and cooperating agencies with appropriate expertise or sufficient knowledge in the particular study area to ensure the objectives of their respective Work Groups are considered and incorporated into the study process. Subgroups will be responsible for the identification of linkages between study efforts and coordination and integration of their work with other subgroups in a timely manner. Subgroups will be responsible for directing and overseeing the work effort of staff assigned to the study as well as potential consultants. When appropriate, subgroups will collaborate on common study elements. Technical subgroups will be supported by technical experts from the implementing agencies, other Federal, State and local cooperating agencies available in a review and advisory capacity and, periodically, stakeholder subgroups, which may include representatives from the Settling Parties, Third Parties, landowners, local agencies, and members of the public having specific knowledge relevant to a particular study or activity. Stakeholder groups will provide

feedback on technical processes and interim documents. In addition, subgroups will periodically meet with the public on broader, Program-wide issues, concerns, and opportunities.

Examples of likely technical subgroups include:

- Water Recapture Plan subgroup
- Recovered Water Account subgroup
- Restoration Flows Procedures and Guidelines subgroup
- Fishery Monitoring subgroup
- Quantitative Modeling subgroup

Other subgroups will be established, as appropriate, to facilitate the implementation of the Settlement.

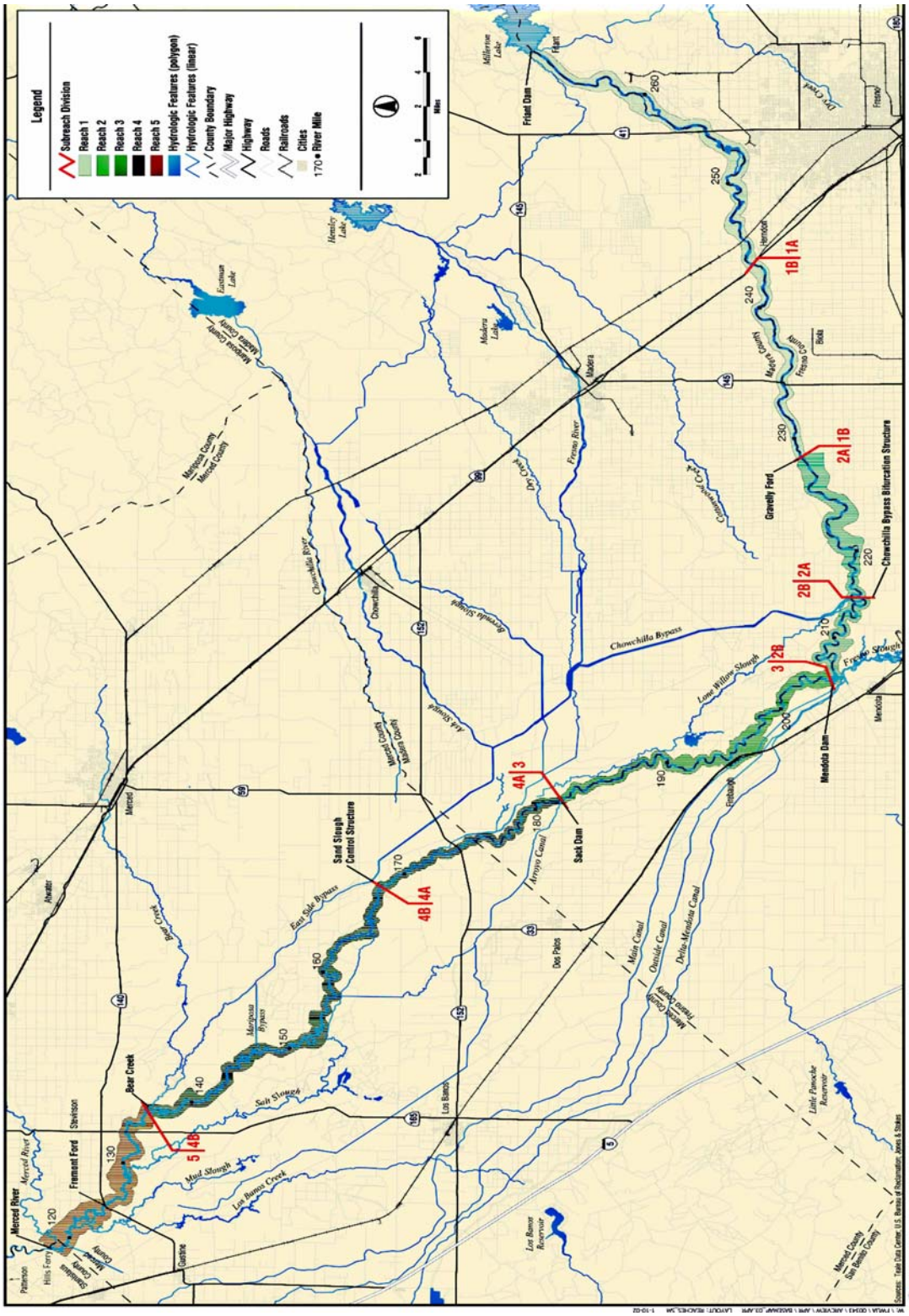
2.2.7 Groups Identified in Third Party MOU

The February 26, 2007 Third Party MOU identifies two subcommittees, which will be convened by the Third Party organizations identified in the MOU. These subcommittees, a landowners Committee and a Coordinating Committee, will address further concerns and provide input to program implementation elements.

2.3 River Reaches

The San Joaquin River is bounded by the Sierra Nevada on the east and Coast Ranges on the west; its southern boundary is divided between the Tulare Lake basin, and its northern boundary is the Delta near Stockton. The river reaches described below are based on the December 2002 San Joaquin River Restoration Study Background Report. These reaches include approximately 150 miles of the San Joaquin River from Friant Dam at the upstream end near the town of Friant, to the confluence with the Merced River at the downstream end. The river flows to the north of the metropolitan area of Fresno, and passes near the communities of Biola, Mendota, Firebaugh, Dos Palos, and Los Banos, within the counties of Fresno, Madera, and Merced.

Figure 2. River Reaches



Each of the five reaches is briefly described below.

- Reach 1—River Mile 267.5 to River Mile 229.0

Reach 1 begins at Friant Dam, where the San Joaquin River exits the Sierra Nevada foothills and enters the Central Valley floor. The downstream end is defined at Gravelly Ford. Reach 1 is divided into two sub-reaches; Sub-reach 1A extends from Friant Dam to State Route 99, and Sub-reach 1B begins at State Route 99 and extends downstream to Gravelly Ford.

- Reach 2—RM 229.0 to RM 204.8

Reach 2 meanders across the Pleistocene alluvial fan of the San Joaquin River between Gravelly Ford and Mendota Dam. The downstream boundary at Mendota Dam also marks the location where the river intersects the north-south axis of the valley. Reach 2 is divided into two sub-reaches. Sub-reach 2A begins at Gravelly Ford and extends downstream to the Chowchilla Bypass Bifurcation Structure. Sub-reach 2B extends from the bifurcation structure downstream to Mendota Dam.

- Reach 3—RM 204.8 to RM 182.0

Reach 3 contains perennial flows of up to 600 cfs, due to water deliveries from the Delta Mendota Canal, through the San Joaquin River channel, and to the Sack Dam diversion into Arroyo Canal. No unique sub-reaches are delineated within Reach 3.

- Reach 4—RM 182.0 to RM 135.8

Reach 4 is divided into two sub-reaches. Sub-reach 4A extends from Sack Dam downstream to the Sand Slough Control Structure. Sub-reach 4B begins at the Sand Slough Control Structure and extends downstream to the confluence with Bear Creek and the Eastside Bypass.

- Reach 5—RM 135.8 to RM 118.0

Reach 5 is bounded on the left bank by Project levees downstream to the Salt Slough confluence and on the right bank to the Merced River confluence. No sub-reaches were delineated within Reach 5.

The Program study area could be different than the area described in the December 2002 San Joaquin River Restoration Study Background Report depending on the alternatives developed in the NEPA/CEQA process.

2.4 Summary of Proposed Actions in Settlement

Implementation of the Restoration Goal includes three essential elements. First, certain improvements providing for channel capacity, fish habitat needs, related flood protection, fish passage and fish screening are required. Second, flow releases at Friant Dam are required to create conditions conducive to Restoration. Third, fish populations are to be

restored and maintained in "good condition" in the San Joaquin River below Friant Dam to the confluence of the Merced River.

Implementation of the Water Management Goal includes two critical elements. First, it requires the development and implementation of a plan to recirculate, recapture, reuse, exchange, or transfer water released for Restoration Flows consistent with certain criteria that are identified in the Settlement. Second, it creates a Recovered Water Account (RWA) that provides an opportunity to make water available to FD long-term contractors who have had reductions in water supply as a direct result of the Interim or Restoration Flows at a reduced water rate in certain wet hydrologic conditions.

As described in section 1.5, an adaptive management strategy will be employed to determine the best means for effectively and efficiently achieving the Restoration Goal and the Water Management Goal.

2.4.1 Settlement Milestones

The proposed actions in the Settlement outline how the implementing agencies will achieve the Restoration Goal and the Water Management Goal. As part of the Settlement, the Settling Parties developed a detailed timeline for the development and implementation of the Program improvements, which are summarized in the following table. For a more detailed summary of Settlement milestones, see the Settlement Actions Matrix in Attachment F.

Table 1. Major Settlement Milestones

Table 1. San Joaquin River Restoration Program Milestones	Date	Milestone
STAGE 1	October 2006	Effective date of Settlement
		Effective date of MOU with State of California
		Secretary commences Settlement implementation
	December 2006	Friant & NRDC select Restoration Administrator
		Friant & NRDC designate six members for the Technical Advisory Committee (TAC)
		Authorizing legislation passed
	January 2007	All existing long-term water service contracts in the Friant Division and Hidden and Buchanan Units amended
		Secretaries of the Interior and Commerce, and the California Secretary for Resources, and the Secretary of CalEPA establish a process for the State and Federal agencies to implement the Settlement
	October 2007	Restoration Administrator, in consultation with the TAC, make recommendations to the Secretary regarding: stock selection; reintroduction strategies; appropriate use of existing and enhanced hatchery facilities and trap and haul; appropriate interim targets; goals and milestones for annual escapement of wild adult Chinook salmon; appropriate long-term targets for annual escapement; and coordination of releases from Friant Dam with fishery restoration actions on the Merced, Tuolumne, and Stanislaus Rivers
	September 2009	NEPA, NHPA, ESA, CEQA review completed
STAGE 2	October 2009	Initiate Interim Flow and Monitoring Program in San Joaquin River
	September 2010	USFWS submits a completed permit application to the NMFS for the reintroduction of spring run Chinook salmon
	April 2012	NMFS issues a decision on the permit application for the reintroduction of spring run Chinook salmon
	December 2012	Reintroduce Spring/Fall Run Salmon
	December 2013	Secretary, in consultation with the Settling Parties and Friant Parties develops operational guidelines
		Phase 1 Improvements completed
STAGE 3	January 2014	Initiate full Restoration Flows
	December 2016	Phase 2 Improvements completed
	December 2024	Secretary of Commerce reports to Congress on the progress made on the reintroduction of spring and fall run Chinook and discusses the plans for future implementation of the Settlement
	December 2025	Review and revise restoration flows, if necessary
	January – July 2026	Any Party may file a motion to request an increase, decrease or material change in the quantity and or timing of the Restoration Flows

2.5 Assumptions and Constraints regarding Timelines

The major milestones agreed to in the Settlement are based on an implementation schedule that was developed during the Settlement process assuming that ideal conditions throughout all stages of implementation in terms of available funding and cooperation from other Federal, state, and local agencies and from landowners and the general public are met. A set of assumptions were made in negotiating the implementation schedule for Paragraph 11 actions. These assumptions include a technical understanding of the nature of the improvements given the current limited availability of detailed site-specific information as well as availability of sufficient funding and resources, and timely availability of detailed information, and survey results for environmental analysis in order to implement Program recommendations. A summary of the major timeline assumptions discussed during the Settlement negotiations are provided below.

2.5.1 Pre-Construction Environmental Compliance Requirement Assumptions

Surveys conducted for endangered or at risk species, historic structures and buried archeological sites; timely acquisition of permits and rights of entry for surveys and regulatory processes; no litigation-related delays; full agency participation and completion of environmental compliance action.

2.5.2 Real Estate Assumptions

Timely acquisition of necessary land and entry rights; cooperative landowners; completion of NEPA/CEQA documentation for acquisition of required real property rights.

2.5.3 Engineering and Design Assumptions

Congressional authorization and appropriations; geological field investigations, field surveys, hydraulic studies, and cost estimates and documentation for alternatives; project features in operation and USFWS and NMFS collaboration for fish screening and passageways; timely issuance of necessary permits and final engineering design data for construction; development, awarding and funding of contracts.

2.5.4 Construction Assumptions

Construction contracts awarded before completion of final designs; no reduction in the annual 120-day construction period due to weather, winter flows and endangered species restrictions; completion of permits before solicitation of bids; availability of construction materials and contractor forces and equipment.

3.0 PROGRAM STAFF ORGANIZATION

This section outlines the staff organization of the Program, and Program contacts from the PMT.

3.1 Organization Charts, Staff Assignments and Consultant Team

As described in the Introduction of this PMP, initially, the PMP will help serve three primary purposes: 1) to help guide the implementing agencies as they organize and staff necessary Work Groups; 2) to inform the other Settling Parties and the public on the process the implementing agencies intend to follow to implement the Settlement; and 3) to help assure that all of the terms of the Settlement are addressed and successfully implemented. Once the implementing agencies have acquired and organized the necessary Work Groups and have received input on this PMP from the other Settling Parties and the public, this PMP may be revised and/or expanded.

After the completion of this PMP, the implementing agencies intend to fully staff the management functions and Technical Work Groups necessary to implement the Settlement, starting with the resources required to implement Stage 1. This will also include hiring a consultant team to help staff the Technical Work Groups. Once management and the Technical Work Groups are in place, this PMP will be updated to include a detailed description of the organization chart, staff assignments, and the consultant team. It is also likely that certain elements of the implementation strategy described in this PMP will be updated based on feedback from various reviews and input from the consultant team.

3.2 Contact List

The contact list will be comprised of Implementing Agencies and Settling Parties, Third Parties, stakeholders, interested individuals and organizations, and key media. The list will be continually updated. The initial list, below, includes the implementing agency leads who act as the PMT.

- U.S. Bureau of Reclamation (U.S. Department of the Interior)
  Jason Phillips
  SJRRP Interim Program Manager
  2800 Cottage Way
  Sacramento, CA 95825-1898
  916-978-5033
  jphillips@mp.usbr.gov

- U.S. Fish & Wildlife Service (U.S. Department of the Interior)
  Dan Castleberry
  Fisheries Program Manager
  California and Nevada Operations Office
  2800 Cottage Way, Suite W2606
  Sacramento, CA 95825-1846
  916-978-6178
  dan_castleberry@fws.gov

- NOAA Fisheries Service (U.S. Department of Commerce)
  Russell J. Bellmer, PhD
  Fishery Biologist
  650 Capital Mall Suite 8-300
  Sacramento, CA 95814
  916-930-3615
  Russell.Bellmer@NOAA.gov

- California Department of Water Resources
  Paula Landis
  San Joaquin District Chief
  3374 East Shields Ave.
  Fresno, CA 93726
  559-230-3310
  plandis@water.ca.gov

- California Department of Fish and Game
  Dale Mitchell
  Environmental Program Manager
  1234 East Shaw Avenue,
  Fresno, CA 93710
  559-243-4005 ext. 156
  dfmitchell@dfg.ca.gov

4.0 PROGRAM TASKS

The following sections detail the tasks to be accomplished to implement the Settlement, including goals for each Work Group and subgroup, as well as public involvement strategies.

4.1 Program Management

4.1.1 Document Review Process

Documents will require a multi-level review and approval process. Technical Memoranda will typically include reviews by the Technical Work Groups and the PMT before releasing them to the RA, stakeholders, and the general public for review. Reports will follow a similar review process with an added review and approval by the APT and the Secretary. Technical Memoranda and reports will typically be submitted as Administrative Drafts, Drafts, and Finals. Comments will be satisfactorily addressed at each submittal stage.

Due to time constraints, review periods will typically be of short duration. Reviews will be initiated at the Technical Work Group level and proceed to the next level review

following a general level of coordination between the subgroup/focused stakeholder group and the Technical Work Group.

4.1.2 Co-located Office

During Stage 1, Reclamation will establish a program office where staff can co-locate to ensure coordination in implementation and streamline document preparation time. The consultant team and program staff from other agencies may also have staff co-located in this Program office. DWR and DFG program staff intend to work out of area offices in coordination with the co-located Federal team.

4.1.3 Project Quality Management Plan

The Project Quality Management Plan is intended to formalize the development, use, and documentation of quality assurance/quality control (QA/QC) processes and reporting protocols. The Project Quality Management Plan will consist of two primary sections; a QA section which will consist of developing procedures for monitoring, checking, peer reviewing, and critiquing project performance on a regular basis and a QC section which will include monitoring work efforts and results to determine if they comply with stated quality assurance standards.

The QA section will describe in detail the necessary quality standards relevant to the various study activities and determine how to implement those standards to ensure the results of the work performed will satisfy the stated performance criteria. The QA section must provide sufficient detail to demonstrate that the project technical and quality objectives are identified and agreed upon, the intended criteria and standards are appropriate for achieving study objectives, assessment procedures are sufficient for confirming that the quality needed and expected are obtained, and any limitations can be identified and documented.

QC will involve monitoring specific project results to determine if they comply with relevant quality standards, and identifying ways to eliminate causes of unsatisfactory results. It will be performed throughout the Settlement period. Project results include both product results, such as data acquisition and management and study deliverables, and project management results, such as cost and schedule performance. QC will be used to identify problems in methodology or computations and to bring out lessons learned that could help minimize future performance problems.

4.1.4 Development of Risk Management Plan

The purpose of this task is to identify any specific tasks that are likely to present critical challenges from a budgetary, scheduling, and coordination perceptive. This task will focus on the development of a systematic process of planning for, identifying, analyzing, responding to, and monitoring project risk. It will involve processes, tools, and techniques that will help the Program Manager and Technical Work Group coordinators maximize the probability and consequences of positive events and minimize the

probability and consequences of adverse events. To the extent possible, the Risk Management Plan will identify potential technical risks, external risks, environmental risks, organizational risks, project management risks, landowner/right of way risks, and regulatory risks.

The Risk Management Plan will both qualitatively and quantitatively assess the significance of identified risks and develop procedures for addressing risks specific to each study area. Each Technical Work Group will develop a Risk Management Plan which will be merged into a program Risk Management Plan identifying common risks and timing and critical coordination issues.

4.1.5 Development of Program Communication Plan

This task will develop a Program Communication Plan identifying the key objectives, strategies, and timing for the generation, collection, dissemination, and storage of project information amongst the Technical Work Groups, subgroups, PMT, and APT.

The Program Communication Plan will identify external and internal communication processes as well as who will be included in the communications process, what information needs to be communicated, the interval, and the format for disseminating the information. The Program Communication Plan will include a conflict management strategy to minimize conflicts and resolve issues through efficient communication with the Settling Parties, Technical Work Group members, and other stakeholders. The conflict resolution strategy will ensure important issues are addressed in a timely, objective manner and that the Program Communication Plan will ensure an effective communication strategy is built into the program delivery process. The Program Communication Plan is a framework and should be considered a living, evolving document that will be revised over the course of the program implementation process.

4.2 Public Involvement Plan

Public involvement and outreach opportunities will be integrated into the tasks of Stage 1, guided by a Public Involvement Plan (PIP), to create an open and visible process through which the general public, stakeholders, affected Third Parties, and other interested Parties can keep track of Program activities and progress and participate in the identification of Program issues and formulation of alternatives. Components of the PIP include:

- A Program contact list of individuals, organizations, and public agencies who want to receive notifications of Program activities;
- Public workshops, co-sponsored with local organization early in the process to present the PMP and the PIP;
- Public scoping meetings to share information and receive official public comment;

- A publicly accessible, Program-specific website that offers timely information and updates, a document repository, a system of accepting and tracking public comments, a calendar of events/progress, and contact information;
- Response-to-comments system to inform those participants how input is addressed;
- E-newsletters and email updates of news, events, and opportunities for input;
- Briefings, site tours and a speaker's bureau for interest groups, water agencies and elected officials;
- News releases and media briefings;
- Fact sheets;
- Mailing/emailing database that is continually expanded; and
- Consider joint and independent public involvement activities by the implementing agencies.

4.2.1 Technical, Public and Stakeholder Participation Strategy

Public involvement and outreach opportunities will be integrated into researching, identifying, analyzing, and documenting the strategies, methodologies, and evaluation requirements necessary during Stage 1, in order to scope and develop these concept level improvements into feasible project alternatives for implementation of the Settlement, including public workshops and scoping meetings.

This task will examine requirements, potential strategies and a process plan for establishing Technical subgroup(s), Stakeholder subgroups open to the public, and/or a cooperating agency group(s) for Stage 1. This task will look at the participation strategies of other programs for potential insight on the organization, roles, and responsibilities of these groups. The result of this task will be a recommended participation strategy, a definition of the groups' roles and responsibilities, and a description of the coordination requirements from a program implementation perspective, and a discussion of the potential risks and uncertainties inherent with this strategy.

The Settlement contemplates establishing opportunities for coordination with Third Parties and other stakeholders which have facilities and property impacted by the Settlement, as well as appropriate input for stakeholders and the public. The implementing agencies will actively seek to co-sponsor Public Workshops with local organizations, in particular where landowner issues are involved. Workshops will provide focused opportunities for two-way dialogue between entities and individuals having facilities and/or property potentially impacted by the implementation of the Settlement.

Some of the anticipated stakeholder subgroups include but are not limited to:

- Reach-by-reach stakeholders
- Water Recovery Plan stakeholders
- Interim and Restoration Flow stakeholders
- Fishery Management stakeholders

- Physical Improvements stakeholders
- Environmental Compliance stakeholders

4.3 Stage 1 Tasks

This section focuses on the tasks necessary for the scoping and development of programmatic evaluation of actions required to address the Restoration Goal and the Water Management Goal. Tasks will consist of researching, identifying, analyzing, and documenting the strategies, methodologies, and evaluation requirements and procedures necessary during Stage 1 to prepare an appraisal level programmatic Initial Program Alternatives Report (IPAR). The IPAR will document the findings of the formulation and evaluation process, describe and estimate the cost of the Program alternatives for both the Water Management Goal and the Restoration Goal, identify significant data needs and analyses required during Stages 1 and 2, and lay out a strategy for the development of a detailed Fishery Management Plan. Stage 1 tasks will be used to develop a PEIS/R.

4.3.1 Alternatives Development

This task consists of researching, identifying, analyzing, and documenting the strategies, methodologies, and evaluation procedures and requirements for developing and implementing channel and structural improvements identified in Paragraph 11 of the Settlement, the Water Recapture Plan as stipulated in Paragraph 16(a) of the Settlement, and any other actions deemed necessary by the Secretary to meet the Restoration Goal (i.e. Paragraph 12 of the Settlement). Paragraph 16(a) identifies recirculation, recapture, reuse, exchanges or transfers as potential mechanisms for recovering flows released for Restoration purposes. In addition, Paragraph 16 of the Settlement stipulates "*…any recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows shall have no adverse impact on the Restoration Goal, downstream water quality or fisheries*." Paragraph 11 of the Settlement consists of two phase of improvements: Phase 1 which needs to be completed by not later than December 31, 2013; and Phase 2 which needs to be completed by no later than December 31, 2016.

At an appraisal/conceptual level, this task shall identify the study area, describe existing conditions, compile existing data, identify data gaps, develop a problem statement, develop a purpose and needs statement, identify problems, needs, and opportunities, define planning objectives and constraints, and define evaluation criteria and performance measures. The alternatives development will be documented in an IPAR addressing all sub-tasks identified in the task. The document will sequentially describe and diagram the entire planning process at a detail sufficient to identify the dependencies between tasks, timing of task activities, and relationships with Program Goals.

4.3.1.1 Notice of Intent and Notice of Preparation

A Notice of Intent/Notice of Preparation (NOI/NOP) will be prepared for posting and distribution to formally initiate NEPA and CEQA compliance processes, respectively.

The objective of a NOI/NOP is to meet the Federal and state legal requirements and to establish a clear path for the PEIS/R in addressing the key issues, such as alternatives, baseline, and the relationship of this PEIS/R to other planning efforts. The NOI/NOP will describe the options identified in the Settlement and the proposed planning and environmental review process as presented in this PMP. Subsequent to the filing of the NOI in the Federal Register, public scoping meetings will be held in various locations throughout the Central Valley. A summary of these scoping meetings will be documented in a Scoping Report.

4.3.1.2 Identification of Data Needs

This task will include the identification and assessment of anticipated planning, design, environmental analysis, and implementation monitoring and data collection needs for the program effort outlined in this PMP. This task must consider the data acquisition needs to meet both the restoration flow and water management objectives. Data collections programs will be identified, defined, prioritized, and implemented during the initial stage and continue throughout the course of the Settlement period. Specific areas of data collection and monitoring will focus around the needs of the Fishery Management Plan, Water Recovery Plan, Recovered Water Account, and Restoration Flow procedures and guidelines and will identify and describe critical linkages and timing considerations to meet the Settlement requirements.

- Immediate Data Needs

The intent of this task is the coordination of data collection and monitoring needs between the various study activities identified in this PMP. To that extent, this task will include a review of existing data developed by the work of the Settling Parties as well as an identification of the monitoring and data collection requirements stipulated in the Settlement. The purpose of this task is to determine the adequacy of the existing data to meet the needs of the four Work Groups' study requirements, identify data gaps in existing data, and develop a coordinated strategy for the collection of data and installation of monitoring stations needed to support the specific studies. The initiation of data collection through this task should include the specific data needs identified in various sections of this PMP. The Immediate Data Needs List will be distributed to the PMT by July 2007.

- Appraisal Level Studies

This task will identify and collect data needed to complete Stage 1 appraisal-level studies. This includes assembling and cataloging existing data consistent with study needs, exclusive of alternative specific data. The data will serve as a basis for preparing a description of existing and future without-project conditions. This task will identify gaps between data needs and data collected. When practicable, materials available electronically will be placed on the website. A scope of work and budget for filling remaining data gaps will be prepared.

- Program and Feasibility Level Studies

Each level of analysis will require a finer resolution of data collection and possibly additional monitoring stations. At the feasibility level of analysis, such activities may include detailed mapping for higher level of analysis that require aerial flights affected by seasonal sun angles and other factors that require early planning to get optimal data. Other field and data collection activities may include geological and geotechnical surveys of potential foundation conditions, and soil stability; biological surveys to identify species and habitats present in potentially affected areas; cultural resources surveys; and other related issues that will be evaluated in the PEIS/R. This task will be documented in a Technical Memorandum.

4.3.1.3 Development of Purpose and Need Statement

A definition of project purpose and need will be developed in consultation with Reclamation, USFWS, NMFS, DFG and DWR staff, and stakeholders. It is anticipated that this task will be iterative and developed in parallel with other plan definition tasks.

4.3.1.4 Definition of Existing and Future Without-Project Conditions

This task will prepare a description of existing conditions within the study area. The basis of this documentation will be existing literature and technical tools, interviews with technical experts and public officials, and discussions with landowners and other stakeholders. The purpose of this task is to establish a baseline condition to the extent possible, serve as a basis for defining "future without-project" conditions, and identify additional information requirements.

The scope of the task will include the physical and environmental, operational, and hydrologic settings within the study area. The physical setting will include, but is not limited to, a description of the river channel by reach, side-channels, storage and conveyance facilities, dams and diversion structures, and other elements potentially influencing flow regimes. The environmental setting should include a description of the affected resources within the study area. The operational setting will include, but is not limited to, a description of the operational framework influencing release patterns, monitoring and data collection, and other elements potentially influencing flow regimes. The hydrologic setting will include, but is not limited to, a description of the river hydrology both above and below Friant Dam, available sources of water supplies, and irrigation and M&I water demands. This task will be reliant on the work effort outlined the Recovered Water Account, which will define the baseline operation conditions for Friant Dam with and without the Restoration Flows.

Formulation and evaluation of alternative plans will be based on the conditions most likely expected to exist in the future if no Interim or Restoration Flows are released. The without-project condition is an estimate of conditions expected to prevail if no action is taken and will be used as the basis of comparison to evaluate alternatives. The without-project condition will be based on the existing conditions, but modified to include reasonable and foreseeable actions that would cause changes to the existing condition.

The results of this effort will be the definition of two existing conditions, one reflecting current Friant operations without consideration of the Restoration Flows and a second existing condition including the Restoration Flows in Friant operations and a future without-project condition. The first condition will serve as a basis for assessing project impacts and the second as a basis for measuring water recovery accomplishments. The results of this task will be documented in a Technical Memorandum for review and approval as stipulated in the program management section of this Plan.

4.3.1.5 Definition of Planning Objectives

This task will involve defining planning objectives through a coordinated effort with other agencies and stakeholders. The definition of objectives will begin with guidance provided for in the Settlement, which identifies several river improvements and includes recirculation, recapture, reuse, exchanges, and transfers as potential mechanisms for reducing or avoiding impacts.

4.3.1.6 Development of Conceptual Models

Numerous conceptual models will be developed for such topics as Chinook salmon population dynamics, water temperature, and surface and subsurface water flow regimes. These models will be integrated into more comprehensive models for management of water resources in the context of water supply, water quality and ecosystem health, reflecting our current understanding of the basic processes that drive the many components of the San Joaquin River Basin. Conceptual models are verbal or graphic depictions of how scientists believe that ecological, hydrological, and managerial systems in the San Joaquin River Basin will function and respond to Program actions. They are precursors to quantitative models and help identify actions that should have a high likelihood of achieving Program objectives and help identify key knowledge gaps and hypotheses that will be addressed by an adaptive management process. Conceptual models will provide the basis for selection of existing quantitative models that will undergo enhancement or will provide the basis for the decision to develop new quantitative models that will be appropriate for the Program. The new quantitative models will require field testing to confirm their utility. The conceptual models and subsequent numerical models will be sufficiently detailed to assist in the evaluation of programmatic alternatives.

4.3.1.7 Identification and Description of Options

Previous studies and products of ongoing activities will be reviewed to identify all potential options for consideration. Options and their potential accomplishments, adverse impacts, and costs will be described based upon existing information. This task will involve a review of assumptions used in other studies for potential application to this study.

This task will include identifying options identified in Paragraph 11 of the Settlement to meet the Restoration Goal and all potential options to meet the Water Management Goal

described in Paragraph 16. Options to be considered will include both structural and nonstructural options. Structural options may require either new facilities or physical modifications of existing facilities, and channel modifications. Nonstructural options would require modifications of existing operations and coordination, including changes to outlet works or other operational features, but would not include new or enlarged structures on the river. Other options, such as additional flood management features and channel and structural improvements not identified in Paragraph 11, but needed to meet the Restoration Goal, will also be identified under this task.

4.3.1.8 Evaluation and Comparison of Preliminary Options

A preliminary assessment of options will be completed at an appraisal-level of detail. A Technical Memorandum will be prepared which describing, for each option, the size or range of sizes of constructed facilities; site access, staging and borrow sites; environmental benefits and impacts; and total option costs will be prepared. Maps will be included showing features associated with each potential option. The Technical Memorandum will recommend options to be retained for further consideration and describe the screening process used.

Engineering Studies

The objective of this task is to obtain sufficient information to evaluate and compare potential options identified in the documentation of the project description. Primary efforts will be directed toward development of appraisal level designs and cost estimates for the options that are identified. The existing conditions data collected in previous tasks will be used to the extent possible, with supplemental site reconnaissance investigations conducted only as needed to provide sufficient information to support these activities. It is anticipated that field explorations and design data needs will be identified and assessed during Stage 1.

Environmental Analysis Strategy

The objective of Stage 1 environmental studies is to provide early information on the sensitive environmental resources in the area and the types of impacts and mitigation measures that can be expected for the preliminary options. This work will assist in the development of more detailed project descriptions necessary for the PEIS/R analyses. A Technical Memorandum will be prepared to describe the screening of initial options and environmental analysis strategy for each option considered.

Real Estate Analysis

This task describes necessary work activities during the initial phase of study (Appraisal Level) and will be documented in a Technical Memorandum, using text, diagrams, photographs, CAD and/or GIS. The necessary activities associated with real estate concerns during this phase of study include the tasks described below.

Identification and Record Management of Land Ownership Information will require a search of real estate records throughout all affected counties. Determination of land ownership data that should include the following: 1) Address and phone number of the owner; 2) Address and phone number of the tenant or manager of the property (if applicable) and indication if this person is authorized to allow Reclamation/State personnel to access the parcel; 3) Location and boundary information about the parcel; 4) Rights and obligations attached to the land (If available); and 5) Storage of this data in a GIS or other data base storage/retrieval system.

A Right of Entry (ROE) process will be required to access parcels during the investigation stage for performance of field surveys, environmental investigations, geological investigations and hydrological investigations. A simplified process should be developed that will utilize one or more standardized ROE forms. A list of responsible individuals that can sign ROEs for Reclamation and the State should be developed. The status of necessary ROE should be tracked at all times.

During this stage of the work land and rights costs will be included in the engineering appraisal level cost estimates. It is anticipated that both fee and easement takes will be required. Easements may be in the form of flood, environmental, conservation or below ground rights. Determination of engineering appraisal level cost estimate per acre costs for these takings can be approximated by a cursory review of comparable sales in the vicinity. Development of generalized and averaged per acre costs will be adequate for the purposes of the engineering appraisal-level cost estimates being prepared. It is anticipated that a more detailed analysis will be required during the feasibility level cost estimates.

4.3.1.9 Development and Evaluation of Alternatives Process

This task will develop a process for formulating options into complete initial alternatives which will address both the Restoration Goal and the Water Management Goal. An alternative may include different combinations of options functioning together to address the planning objectives.

This task will also identify a process for evaluating the accomplishments and impacts of each alternative compared to the existing and future without-project condition. The evaluation process will forecast the most likely with-project condition expected under each alternative plan. The process will identify and document evaluation criteria and assumptions used during the process. A Technical Memorandum will document the results of this task for coordinating the strategy with stakeholders.

4.3.1.10 Development of Initial Alternatives

Using the strategy developed under the identification and description of options, a list of initial alternatives will be developed. The formulation and evaluation of these alternatives will provide an understanding of how options work together at various sizes and combinations, and to identify potential system-wide affects.

A Technical Memorandum will be prepared to describe the initial alternatives and the approach to their formulation. Each initial alternative will be developed to a level of detail sufficient to support preparation of appraisal-level cost estimates. Each initial alternative will be described in a one-to-two-page format including a map; schematic diagram; narrative discussion of facilities including capacities, configurations and locations; and institutional/implementation issues. The following information will be included in the description of each conceptual alternative:

- Features: description of features included in the alternative;
- Operations: assumed operational criteria;
- Schedule: estimated time to construct and bring facility on-line;
- Land requirements: right of way requirements and feasibility of obtaining the required rights-of-way;
- Permitting requirements: list of key agencies and permits with long lead times
- Impacts: environmental, biological, cultural, socioeconomic, and recreation; preliminary assessment of mitigation measures; and
- Constructability: terrain considerations, utility requirements and impacts, staging requirements.

4.3.1.11 Preparation of Initial Program Alternatives Report

This task includes the preparation of an Initial Program Alternatives Report (IPAR) documenting present and future baseline conditions, describing initial planning objectives, opportunities and the range of complete initial alternative plans that address the planning objectives, and describing potential environmental impacts and an initial screening and comparison of alternatives. This report will be used to present to the stakeholders and public the alternatives to be considered by the program.

4.3.2 Fishery Management Plan

The San Joaquin River Restoration Program Fishery Management Plan (FMP) will provide a roadmap to adaptively manage efforts to restore and maintain naturally reproducing and self-sustaining populations of salmon and other fish in the San Joaquin River below Friant Dam to the confluence of the Merced River. The Fishery Management Work Group (FMW) began working on the FMP in February 2007 and anticipates that it will be completed by December 2008. The draft table of contents for the FMP (Attachment E) was developed based on a review of numerous fishery management plans developed for west coast salmon fisheries. The following five sections describe the steps needed to complete the plan and other fishery related Program actions.

4.3.2.1 Salmon Population Models

The FMW will first develop conceptual models that describe the habitat requirements of the various life history stages of spring-run and fall-run Chinook salmon and the likely environmental factors that will control the abundance of these species in the San Joaquin River and the extent to which these factors may control abundance. Next, quantitative models developed for Central Valley Chinook salmon populations will be reviewed to determine whether one can be modified to represent the restored populations in the San Joaquin River. Outside support will be solicited to develop quantitative models for spring-run and fall-run Chinook salmon in the San Joaquin River. The models will provide structured and quantitative tools the FMW, implementing agencies, RA and TAC, and others can use to:

- Identify and prioritize likely limiting factors that control the abundance of salmon;
- Develop population goals for spring-run and fall-run Chinook salmon and other performance measures;
- Guide habitat Restoration and flow management;
- Identify key uncertainties, data needs, and develop testable hypotheses; and
- Identify criteria for construction and operation of water management and fish protection facilities.

4.3.2.2 Development and Implementation of Work Assignments and Scopes of Work

The FMW will develop a majority of the sections in the FMP using the numerous reports on the historical and existing conditions of the fish populations, their habitats, water supply, and restoration strategies that have been provided by the Parties to the Settlement. In addition, the FMW will ensure that the existing river channel and floodplain habitats are surveyed and that the results are used to evaluate potential habitat restoration projects.

Some plan sections will be developed with the assistance of other Work Groups. For example, the PMT will provide the information for the sections on Legal and Policy Context and the Implementation Plan. The Environmental Compliance, and Permitting Work Group will provide information on the Program alternatives, impacts and benefits, formal planning steps, and the criteria used in making decisions or recommendations. The Water Management Work Group will provide information needed to develop a Fisheries Flow Management Plan. The Engineering and Design Work Group will provide information on channel and structural improvements related to fish passage and screening.

Outside support may be needed to develop quantitative models for spring-run and fall-run Chinook salmon in the San Joaquin River. The FMW will identify additional outside support needs and develop scopes of work to fulfill these needs by May 2007.

4.3.2.3 Data Needs Specific to the Fishery Management Plan

The FMW developed an immediate data needs list of information required to complete the FMP. This data needs list will be revised as new information becomes available and as Settling Parties' reference materials are reviewed and incorporated.

The preliminary immediate data needs list includes the following tasks:

- Develop a water temperature model that includes Millerton Reservoir and the bypass channels of Reach 4B by completing, and if necessary, expanding the ongoing DWR modeling effort.
- Develop quantitative population models for spring-run and fall-run Chinook salmon in the San Joaquin River by modifying existing or developing new Central Valley models. The models should integrate the existing conditions in the San Joaquin River and Delta, Restoration Flows and reservoir management, the water temperature model, potential habitat restoration, and habitat requirements of spring-run and fall-run fish. The existing conditions should include the distribution and quality of spawning habitat, holding habitat, fluvial geomorphic processes and riparian vegetation
- Assess the effects of flow magnitude and duration, water temperature, groundwater flow, unscreened diversions, contaminants, invasive non-native species, predators.
- Assess the interactions between spring-run and fall-run, harvest, juvenile food resources, Delta exports, the Head of the Old River Barrier, Delta water quality, and ocean ship traffic in the deep water ship channel.
- Collect and analyze sediment bulk samples at potential spawning habitats by evaluating the existing work by Jones & Stokes and Entrix in 2000 and 2002 and by expanding upon the DWR surveys to be conducted in Summer 2007.
- Survey the quantity and quality of spring-run holding habitat by expanding upon the DFG surveys to be conducted in Summer 2007.
- Survey the size and location of captured gravel pits.
- Develop a quantitative riparian recruitment model for the San Joaquin River.
- Evaluate the migratory behavior and habitat requirements of spring-run Chinook salmon populations to be considered as sources for reintroduction into the San Joaquin River.
- Develop models of the relationship between flow releases at Friant Dam and the area of inundated floodplain habitats for each of the five project reaches by completing the ongoing DWR modeling effort.
- Assess the effects of legal and illegal harvest of Chinook salmon and other fish.

4.3.2.4 Recommendation and Coordination of Fishery Related Planning, Modeling, or Research and Monitoring Supporting Implementation of the Restoration Goal

The following table presents ten subtasks that will require coordination between the FMW and the other Work Groups:

Table 2. Work Group Coordination

Subtask	Work Group	Start Date	End Date
1. Interim Program Alternatives Report	Environmental Compliance, & Permitting	Apr 2007	Dec 2007
2. Public Comments on FMP	Public Affairs Team	Jul 2008	Sep 2008
3. Environmental Compliance Strategy Document	Environmental Compliance, & Permitting	Feb 2007	Sep 2009
4. Assist with Completion of Environmental Compliance Documents	Environmental Compliance, & Permitting Work Group	Feb 2007	Sep 2009
5. Application for NMFS Permit to Reintroduce Chinook Salmon	Environmental Compliance, & Permitting Work Group	Dec 2007	Sep 2010
6. Communications and Outreach Plan	Public Affairs Team	Feb 2007	Dec 2025
7. Help Implement Outreach Plan	Public Affairs Team	Feb 2007	Dec 2025
8. Help Design Interim Instream Flow Studies	Water Management Work Group	Feb 2007	Oct 2009
9. Fishery Flow Schedule Refinement	Water Management Work Group	As Needed	Dec 2025
10. Habitat Restoration & Channel Improvement Planning	Engineering & Design Work Group	Feb 2007	Dec 2016
11. Infrastructure Planning to Facilitate Fisheries Monitoring and Research	Engineering & Design Work Group Environmental Compliance & Permitting Work Group	June 2007	Dec 2010

The FMW will develop a draft Work Group Coordination Plan by May 2007 that will describe how the Work Group will interface, coordinate, and communicate with other Work Groups. Four actions have been identified to facilitate Work Group coordination:

- FMW meeting notes will be distributed to other Work Groups;
- FMW team members will attend other Work Group, TAC, Third Party Group, and public outreach meetings;
- Specific data needs from other Work Groups and stakeholders, including coordinating permitting specific to Paragraph 14 in Settlement regarding the reintroduction of salmon will be identified and recommendations and coordination on any fishery planning, modeling, or research and monitoring need for effort of other Work Groups will be provided; and
- Raise significant issues to the PMT as soon as possible.

4.3.2.5 Support Permitting Specific to Paragraph 14 of the Settlement

The Fishery Management Work Group will provide information in support of the permitting process and documentation to assist USFWS and NMFS in fulfilling the requirements of Paragraph 14. It is anticipated that this information will be included in the Fishery Management Plan or accompanying supporting documents.

Paragraph 14 of the Settlement instructs USFWS to submit a completed permit application to NMFS for the reintroduction of spring-run Chinook salmon as soon as practical, but no later than September 30, 2010. NMFS shall issue a decision on the permit application as expeditiously as possible, but no later than April 30, 2012.

The FMW will coordinate with the Environmental Compliance & Permitting Work Group to develop an application and supporting documentation to be submitted to NMFS by September 30, 2010.

4.3.3 Recovered Water Account

The second major action item identified in Paragraph 16 as integral to the successful implementation of the Water Management Goal is the establishment of a Recovered Water Account and program. Paragraph 16 (b) directs the Secretary, in consultation with the Plaintiffs and Friant Parties to establish, "*a recovered water account and program to make water available to all of the Friant Division long-term contractors who provide water to meet Interim Flows or Restoration Flows for the purpose of reducing or avoiding the impact of the Interim Flows and Restoration Flows on such contractors*." This task will identify a process and surrounding issues associated with developing and implementing a water accounting system to account for net reductions in water deliveries to such contractors and a program to make water available to Friant Division long-term contractors to reduce or avoid the impacts of Interim and Restoration Flow releases. This task will include an evaluation of similar programs and plans, development of a monitoring system, development of procedures and guidelines and computer program to document system performance before implementation of Interim and Restoration Flows, development of process and procedures for Interim and Restoration Flow management, an identification of potential water costs, development of an accounting system, and documentation of the process in a series of interim deliverables at key milestones in the overall programmatic planning effort and Recovered Water Account Report.

The Fisheries Management and Water Management Work Groups will work collaboratively on the development and implementation of the Recovered Water Account and program and assessment of potential impacts.

4.3.4 Restoration Flow Guidelines

Restoration Flows include the Base Flows and Buffer Flows described in Exhibit B of the Settlement (Attachment A), plus any additional water acquired by the Secretary from willing sellers to meet the Restoration Goal.

The processes for developing the restoration flow procedures and guidelines will include 1) examination of the existing operational criteria and procedures, 2) development of Interim and Restoration Flow guidelines, 3) evaluation of the success of the Interim and Restoration Flow implementation, and 4) establishment and management of future operational criteria. Paragraph 13(j) states: *"Prior to the commencement of the Restoration Flows as provided in this Paragraph 13, the Secretary, in consultation with the Plaintiffs and Friant Parties, shall develop guidelines, which shall include, but not be limited to:*

- *Procedures for determining water-year types and the timing of the Restoration Flows consistent with the hydrograph releases (Settlement, Exhibit B);*
- *Procedures for the measurement, monitoring and reporting of the daily releases of the Restoration Flows and the rate of flow at the locations listed in Paragraph 13(g) to assess compliance with the hydrographs (Settlement, Exhibit B) and any other applicable releases (e.g., Buffer Flows);*
- *Procedures for determining and accounting for reductions in water deliveries to Friant Division long-term contractors caused by the Interim Flows and Restoration Flows;*
- *Developing a methodology to determine whether seepage losses and/or downstream surface or underground diversions increase beyond current levels assumed in Exhibit B;*
- *Procedures for making real-time changes to the actual releases from Friant Dam necessitated by unforeseen or extraordinary circumstances; and*
- *Procedures for determining the extent to which flood releases meet the Restoration Flow hydrograph releases made in accordance with Exhibit B. Such guidelines shall also establish the procedures to be followed to make amendments or changes to the guidelines."*

This restoration flow procedures and guidelines development task will be comprised of three phases based on the restoration flow implementation goal and time frame: 1) the Stage 1 planning period; 2) the Stage 2 Interim Flow period when hydraulic and fishery studies are implemented; and 3) Stage 3 when monitoring is conducted to determine whether the timing of the restoration flows are adequate to achieve the Restoration Goal. It is envisioned that the timing of the Restoration Flows will be adaptively managed throughout the life of the Project. The decision making and accounting process involved

in the management of the Interim and Restoration Flows including descriptions of the roles of the Settling Parties, meeting schedules, agency roles, operation decision making, and implementation criteria will be documented in a Restoration Flows Procedures and Guidelines Report. A series of interim deliverables at key milestones will be included in the overall programmatic planning effort.

4.3.5 Evaluation of Water Rights, Acquisitions, and Transfers

- Evaluation of Water Rights

This task will require a thorough evaluation of the authorized water rights for the Friant Unit of the CVP and the relationship of those water rights to State and Federal laws governing the recirculation, recapture, reuse, exchange, banking and/or transfer of CVP water. Under this task, a report will be prepared on the extent to which the authorized water rights for the Friant Unit of the CVP are consistent with and support the activities necessary for implementation of the Water Recovery Plan and overall San Joaquin River Restoration Goals. Items to be reviewed will include but not be limited to: existing places of use, existing purposes of use, seasons of diversion, and authorized quantities of diversion. The report will also identify any changes necessary to the CVP water rights and outline the process for obtaining the necessary authorizations for those changes.

The report will also identify the extent of the need for and the significance of modifying the CVP water rights to include fish and wildlife as an authorized purpose of use for FD will have with respect to accomplishing the San Joaquin River Restoration Goals. Consideration will also be given to possible Water Code Section 1707 actions to protect instream flows below Millerton and the potential for adding additional points of diversion and rediversion on the San Joaquin River below Millerton to facilitate recirculation/reuse of Friant Division water.

Additionally and to the extent that non CVP water rights are implicated in the proposed Water Recovery Plan and in meeting overall San Joaquin River Restoration Goals, the report will identify those water rights, the nature and extent of their implication, ownership of such rights and current authorized purposes and places of use, points of diversion and rediversion, and seasons of diversion. To the extent the proposed plan contains sufficient detail to allow for the necessary analysis, the report will examine how and to what extent water rights held by others (i.e., non CVP) would be voluntarily incorporated or integrated into the Water Recovery Plan and overall Restoration Goals and the extent of water right modifications that would be necessary and the process for obtaining those voluntary changes.

- Evaluation of Water Acquisition Program

After the completion of at least the initial work on evaluation of water rights and water transfer programs and opportunities, this task will require a thorough evaluation and reporting of existing long-term water acquisition programs and the effect on those programs of the SJR restoration objectives and the potential effects of the Water

Recovery Plan. Existing and active water acquisition programs include the Water Acquisition Program (WAP) which was established under CVPIA Section 3406(b)(3) to acquire water to increase instream flows for anadromous fish and to meet refuge Level 4 water needs for optimum habitat. Another existing water acquisition program is the Environmental Water Account (EWA), a CALFED program to provide water for fishery protection and to reduce impacts to agricultural, municipal, and industrial water users dependent on the Federal and State pumping facilities in the Delta.

Implementation of the proposed Water Recovery Plan may increase the competition for a resource that is already in short supply, especially in dry or below normal years when it is needed most, and will potentially result in increased costs of water for all programs. Current demands for funding of existing programs are very limited.

The report for related acquisition programs will include but not be limited to the evaluation of funding sources for the related programs and the impacts that potential SJR water acquisitions may have on those related programs.

- Evaluation of Water Transfer Programs and Opportunities

Under this task, applicable provisions of the Reclamation Reform Act (RRA) and the CVPIA, and the applicable CVP contract provisions, will be identified and evaluated as they relate to recirculation, recapture, reuse, exchange banking and/or transfer of CVP water and will report on the limitations that such laws may impose on the ability to implement the Water Recovery Plan.

FD water service contracts allow for water transfers, exchanges, and groundwater recharge and/or banking. This task will identify the anticipated transactions by which FD contractors will use transfers, exchanges, groundwater recharge and/or banking for the purpose of reducing or avoiding impacts to water deliveries to all of the FD long-term contractors caused by the Interim Flows and Restoration Flows.

Each identified mechanism will include detailed discussions on the physical actions needed to complete the transaction. The discussion will include but will not be limited to returning previously banked water to the contractor (depositor's) service area, the use of non-Federal facilities, water right actions, RRA, applicable provisions of §3405(a) of CVPIA and any applicable state law.

4.3.6 Formulation and Evaluation of Final Alternatives and PEIS/R

The first portion of this task will focus on the continued process for formulating alternatives consistent with the Restoration Goal and the Water Management Goal of the Settlement and draft language within the pending legislation, centering on the preparation of a Final Alternatives Report. This Report will describe the formulation, evaluation, and comparison of a comprehensive set of alternatives to address the planning objectives. The Final Alternatives Phase is a continuation of the development of the initial alternatives, with an intensive analysis of the initial alternatives. Analyses include

hydraulic and hydrologic modeling, feasibility level engineering designs and cost estimates, benefits estimation, preliminary environmental review and preliminary real estate cost evaluations. The basic plan formulation process will follow the steps outlined in the Federal Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (WRC, 1983) (P&G) and pertinent Federal, State, and local laws and policies. The principal planning steps are outlined below:

- Specifying water and fisheries resources problems, needs, and opportunities to be addressed;
- Inventorying, forecasting, and analyzing existing and likely future conditions in the study area;
- Developing planning objectives, constraints, considerations, and criteria;
- Identifying potential resources management measures;
- Formulating alternative plans;
- Evaluating and comparing alternative plans; and
- Selecting a plan for recommended implementation.

The iterative planning process will be led by a multiple-agency planning team of professional water resources planners, engineers, environmental scientists, fishery biologists, and related disciplines experts. It will involve the input and participation of concerned stakeholders, advisory groups, regulatory agencies, NGO's and members of the general public. Upon completion of the feasibility study, it will be documented in a Feasibility Report and accompanying PEIS/R as the basis for decision making by federal agencies, Congress, the President and state government.

4.3.6.1 Formulation of Final Alternatives

Using the Initial Alternatives Information Report as a basis for initiating the work effort, this task will develop detailed comprehensive alternatives to meet the planning objectives. This task will review the initial alternatives development process and revise existing or add new resource management measures to reflect updates in project or study area conditions. The assumptions and screening process will be reviewed and revised to reflect current conditions and new initial alternatives will be developed, if necessary. Alternatives and their potential accomplishments, adverse impacts, and costs will also be described. Descriptions of the comprehensive alternatives will define engineering features, modeling needs, fish reintroduction and summarize how the alternatives meet the Restoration Goal and the Water Management Goal.

Alternatives will include both structural and nonstructural options. Structural options would require either new facilities or physical modifications of existing facilities. Nonstructural options would require modifications of existing operations and coordination, including changes to outlet works or other operational features, but would not include new or enlarged structures on the river.

A Technical Memorandum will be prepared describing each alternative and formulation process. Each alternative description will include maps; feasibility level engineering drawings; narrative discussion of facilities including capacities, configurations and locations; and institutional/implementation constraints. The following information will be included in the description of each alternative:

- Features: Description of features included in the alternative;
- Operations and adaptive management actions: Assumed operational criteria;
- Schedule: Estimated time to construct and bring facility on-line;
- Land Requirements: Right of way requirements and feasibility of obtaining the required rights-of-way;
- Permitting Requirements: List of key agencies and permits with long lead times;
- Impacts: Environmental, fisheries (within and outside of project area), biological, cultural, socioeconomic, and recreation; preliminary assessment of mitigation measures; and
- Constructability: Terrain considerations, utility requirements and impacts, staging requirements.

4.3.6.2 Evaluation and Comparison of Final Alternatives

The evaluation and comparison of final alternatives will be similar to the process outlined in the development of the initial alternatives, but quantitatively at a level of detail sufficient to determine their feasibility. The alternatives will be evaluated and compared using the five tests of viability as defined in the P&Gs: acceptability, effectiveness, efficiency, environmental sound, and completeness. A Technical Memorandum will be prepared which describes, for each option, the size or range of sizes of constructed facilities, site access, staging and borrow sites, environmental benefits and impacts, including associated mitigation requirements, and total costs. Maps will be included showing features associated with each potential alternative.

Engineering Studies

The objective of this task is to obtain sufficient information to evaluate and compare final alternatives. Primary efforts will be directed toward development of feasibility level designs and cost estimates for the alternatives that are identified. The existing conditions data collected in previous tasks will be used to the extent possible, with supplemental site reconnaissance investigations to provide sufficient information to support these activities. It is anticipated that field explorations and design data needs will be identified and assessed during the development of the initial alternatives. It is anticipated the acquisition of data needs supporting detailed evaluation alternatives, and ultimately staged to site specific design of the Preferred Alternative, will be ongoing during Stage 2.

To the extent possible, engineering investigations will include surveying and mapping, hydrology and hydraulic studies, geotechnical investigations, site investigations, design analysis, and cost estimating in support of fish reintroduction. The amount of

engineering detail will be sufficient to support comparison of alternatives, selection of a preferred alternative, and project implementation.

It is expected that detailed studies to support site specific project implementation will be accomplished during Stage 2, following the Programmatic ROD. Cost estimates of alternatives will be based on feasibility scope quantity takeoffs required for each alternative. Alternative analysis will be at a detail great enough to effectively compare alternatives in terms of costs, benefits, and environmental, hydrologic, social, and cultural impacts.

Economic Studies

The evaluation of alternatives during this task will require economic analysis of impacts and benefits within the study area, including:

- Economic Analysis

This analysis includes describing benefits for use in the plan formulation process to develop the National Economic Development (NED), Regional Economic Development (RED), and Other Social Effects (OSE) accounts required under current Federal regulations. Early in this task, an appraisal-level evaluation will be conducted regarding social and economic effects of the candidate alternatives. Once this information is developed, NED, RED, and OSE accounts will be compiled and summarized comparing the various alternatives that will be considered in detail. NED, RED, and OSE accounts will be used to document tradeoffs between the alternatives. This task will also include any additional flood damage and potential flood damage reduction benefits for alternative plans considered. This will include obtaining and/or updating flood plain maps, flood hazard and damage information, and average annual flood damages as appropriate to help compare alternatives.

- Fish and Wildlife Habitat Mitigation Costs

These are the costs involved in implementing measures recommended to mitigate losses of fish and wildlife habitat caused by project construction, operation, maintenance, and replacement. The cost of implementation of these measures is assumed to be expended concurrently and proportionately with their related project measures.

- Financial Analysis Report

This task will perform any financial capability analysis to determine the capability to undertake the required financial obligations for implementation of the project. Additionally, this task will develop a financing plan displaying the ability to meet the construction cost requirements for implementing the selected plan. It will identify potential capital outlay required to implement the selected plan, and to approximate an annual schedule of expenditures.

Environmental Analysis Strategy

The objective of these environmental studies is to provide sufficient detail of sensitive environmental resources in the study area to determine the feasibility of a particular alternative. Information will include the types of impacts and mitigation measures that can be expected by the proposed actions. This work will assist in the development of the detailed project descriptions necessary for the PEIS/R analyses. For each alternative, a Technical Memorandum will be prepared describing the environmental impacts and mitigation measures for each resource considered. In addition, the Technical Memorandum will include the following:

- Description of the Study Area for environmental analyses and areas of direct and indirect impact;
- Description of data, research, and reconnaissance used to identify and analyze all potential impacts;
- Description of additional data needs;
- Description of specific studies needed for each resource area;
- Description of coordination requirements between regulatory agencies and study team;
- Estimation of time requirements for completing data collection, specific studies, and coordination;
- Regulatory compliance and a timeline; and
- The environmental quality (EQ) account non-monetary effects on significant natural and cultural resources.

Real Estate Analysis

This task describes necessary work activities required during the feasibility level stage and will be documented in a Technical Memorandum, using text, diagrams, photographs, CAD and/or GIS. The necessary activities associated with real estate concerns during this phase of study include the tasks described below.

The task associated with identification and record management of land ownership information and Rights of Entry (ROE) will continue through this stage. It is expected that the quality of the information, and the storage and management of this information will have increased. The rationale of any recommended revisions to the procedures that were developed during the appraisal level stage will be documented.

During this stage of the work, land and rights costs will be evaluated for inclusion in engineering feasibility cost estimates. Engineering and real estate studies will determine lands, easements, rights-of-way, relocations, and disposal areas necessary for project alternatives. A gross appraisal of land costs, resale values, and damages will be conducted for determination of per acre costs to be included in cost estimates for alternative plans. When determined necessary, preliminary acquisition maps showing affected ownerships and project design and mitigation requirements will be developed.

Where project waters may produce hydraulic impacts to private property or public use rights, a physical taking analysis may be required. Where owners of project affected facilities or utilities have a vested interest, a preliminary attorney's opinion of compensability evaluating the value of this interest may be required.

4.3.6.3 Preparation of Final Alternatives Report

This task will prepare a Final Alternatives Report documenting existing and future without-project conditions, qualitatively and quantitatively describe problems and needs, define planning objectives and opportunities, formulate a range of complete alternative plans addressing the planning objectives, identify and discuss environmental impacts and mitigation measures, and identify a preferred alternative that meets the Restoration Goal and the Water Management Goal. The report will be submitted in draft format for a multiple level review process including the technical team, stakeholders, PMT, TAC and RA, and the Agency Policy Review Team. A final report will be prepared addressing comments received during the draft report review process.

4.3.6.4 Collection and Analysis of Data

This task will include identification and assessment of anticipated design and environmental planning data needs. Building off of the development of initial alternatives, data collection programs will be developed and initiated. Such activities may include detailed mapping for higher level of analysis that require aerial flights affected by seasonal sun angles and other factors that require early planning to get optimal data. Other field and data collection activities may include geological and geotechnical surveys of potential foundation conditions, and soil stability; biological surveys to identify species and habitats present in potentially affected areas; cultural resources surveys; and other related issues that will be evaluated in the PEIS/R.

4.3.6.5 Preparation of Programmatic Environmental Impact Statement/Environmental Impact Report

The PEIS/R will disclose the impacts of the recommended plan and alternatives to the public in compliance with NEPA and CEQA, and provide the Federal and State decision-makers with the information necessary to make an informed decision. The PEIS/R will be prepared in coordination with the feasibility level alternatives evaluation.

The PEIS/R will be organized to comply with the content requirements of both NEPA and CEQA focusing on those actions to implement the Restoration Goal and the Water Management Goal under the Settlement in compliance with the draft legislation. The PEIS/R will evaluate and compare the impacts of the preferred alternative and other alternatives developed through the scoping process. NEPA and CEQA require consideration of a full range of reasonable alternatives. NEPA requires equivalent levels of analysis for the alternatives, while CEQA focuses on the specific components of the alternatives that can reduce or eliminate the significant impacts associated with the proposed Project.

The impact assessment will address effects related to changes in the availability of water for agricultural, urban, and environmental purposes. The geographic extent of the regional evaluations may be dependent on water release regimes in each alternative. The assessment may involve the use of computer models. The model assumptions and limitations may be documented in detail for each alternative. The identified models that may be used in the study include the CALSIM model that simulates the statewide water supply operation including the SWP and CVP. The CALSIM model may be expanded later to include FD operations with and without Restoration Flows. Regional economic impacts may be evaluated using economic analysis models currently being used in the common assumptions effort.

NEPA also requires the identification of the "environmentally preferable alternative" in the ROD. The environmentally preferable alternative is the alternative that: 1) causes the least damage to the biological and physical environment; and 2) best protects, preserves, and enhances historic, cultural, and natural resources.

The specific scope for each environmental area may be determined by the Implementing Agencies and others at the completion of the scoping process.

4.3.7 Stage 1 Milestones

Table 3. Stage 1 Milestones

Description	Deliverable Date
Program Management Plan	Apr. 2007
Notice of Intent/Notice of Preparation	June 2007
Data Needs for Appraisal Level Studies	July 2007
Existing and Future Without-Project Conditions	Aug. 2007
Scoping Report	Oct. 2007
Water Management & Fisheries Options TM	Sept. 2007
Draft Restoration Flow/Operational Guidelines	Dec. 2007
Initial Alternatives and Conceptual Model TMs	Feb. 2008
Initial Program Alternatives Report	Apr. 2008
Restoration Flow Guidelines	Apr. 2008
Draft Fishery Management Plan	Sept. 2008
Plan Formulation TM	Sept. 2008
Program Alternatives Report	Oct. 2008
Fishery Management Plan	Dec. 2008
Admin Draft PEIS/R	Jan. 2009
Draft PEIS/R	Mar. 2009
Final PEIS/R	July 2009
ROD/NOD	Sept. 2009
Initiate Interim Flows	Oct. 2009

4.4 Stage 2

Stage 2 commences in October 2009 with the release of Interim Restoration Flows and will conclude in December 2013 with the completion of Phase 1 improvements and agreement on operational guidelines. During Stage 2, an Interim Flows program will be implemented to collect relevant data concerning flows, temperatures, fish needs, seepage losses, recirculation, recapture, and reuse. Stage 2 also includes the reintroduction of spring-run and fall-run Chinook salmon and the implementation of all Phase 1 channel improvements. Public workshops and meetings will be held frequently throughout Stage 2 to keep interested members of the public apprised of the progress made toward achieving the Program Goals.

4.4.1 Interim Flow Water Management and Monitoring

Fishery and hydrological studies will be implemented during the Interim Flow releases, which are scheduled to commence no later than October 1, 2009 and continue until full Restoration Flows begin. These studies will be planned by the FMW and the Water Management Work Group during Stage 1 and described in the FMP and a Technical Memorandum that will be included in the PEIS/R. The Interim Flow and Monitoring Program will include the releasing of flows of a timing and magnitude as defined in the approximate year type hydrograph specified in the Settlement without such flows impeding or delaying completion of Phase 1 improvements or exceeding existing downstream channel capacities (Table 4). Although the Settlement stipulates that the re-introduction of Chinook will not begin until 2012, it is possible that studies in Stage 2 might involve limited releases of Chinook for specific research purposes. These limited releases might be required if the information derived is essential and could not otherwise be obtained through laboratory experimentation, hatchery rearing, out-of-the basin investigations, etc. Monitoring reports will be developed annually.

Table 4, Anticipated Interim Flow Release Schedule

Year	Release Period
2009	October 1 through November 20
2010	February 1 through December 1
2011 & 2012	Assuming in-channel construction begins by May 1, February 1 through May 1 and May 1 through September 1 to wet the channel down to the Chowchilla Bifurcation Structure to collect information regarding infiltration losses
Subsequent Years	If the highest priority channel improvements are not completed, release flows for the entire year.

4.4.2 Reintroduction of Chinook Salmon

Spring-run and fall-run Chinook salmon are to be reintroduced to the San Joaquin River between Friant Dam and the confluence with the Merced River at the earliest practical date after commencement of sufficient flows and the issuance of all necessary permits, but no later than December 31, 2012. The FMW will coordinate with other work groups to develop the USFWS application and supporting documentation for the reintroduction of spring-run Chinook salmon to be submitted to NMFS by September 30, 2010. The plan to reintroduce Chinook salmon to the river will be described in the FMP that will be included in the PEIS/R. The NMFS will be expected to issue a decision on the permit application as expeditiously as possible, but no later than April 30, 2012.

4.4.3 Implementation of Phase 1 Channel Improvements

The Engineering and Design Work Group will coordinate with the FMW and real estate specialists to develop detailed engineering designs appropriate for initiating construction contracts, complete the acquisition of temporary or permanent land easements or rights-of-way that are required for implementation, and complete the construction of all Phase 1 priority Program features identified in the Settlement. The FMW will help supervise the construction activities. Public workshops and meetings will be held frequently throughout Stage 2 to keep interested members of the public apprised of the schedule of activities and the progress made related to construction activities. Separate site-specific environmental documents will be prepared prior to initiating the detailed engineering, design, and land acquisition processes for alternatives in the PEIS/R that were not analyzed in sufficient detail to initiate construction. Stage 2 will conclude in December 2013 after all Phase 1 priority construction activities have been completed.

4.4.4 Real Estate Acquisition

This task will include general land acquisition processes, including:

- Develop an acquisition and relocation plan with proposed schedule for the project;
- Prepare surveys, legal descriptions and tract maps;
- Open escrow accounts and obtain preliminary title reports;
- Obtain preliminary opinion of title from Interior's Solicitor's Office;
- Complete necessary HAZMAT reviews;
- Develop real estate acquisition purchase agreements;
- Negotiate with landowners;
- Prepare and finalize acquisitions documents;
- Prepare certificate of inspection and possession; and
- Obtain final opinion of title from the Department of the Interior's Solicitor's Office.

Other tasks for Stage 2 will be determined in the near future.

4.4.5 Stage 2 Milestones

Table 5. Stage 2 Milestones

Milestones	Date
Initiate Interim Flows and Monitoring Program	Oct. 2009
Complete application for NMFS permit to reintroduce salmon.	Sept. 2010
NMFS issues permit to reintroduce salmon.	Apr. 2012
Reintroduce Chinook salmon	Dec. 2012
Complete all Phase 1 priority construction activities	Dec. 2013
Final Interim Flow Study Report	June 2014

4.5 Stage 3

The primary activities in Stage 3 include the release of full Restoration Flows from Friant Dam, continued implementation of the Fishery Monitoring Plan, construction of the remaining Program features that were not Phase 1 priority, and the operation and maintenance of project facilities. The full Restoration Flows shall commence no later than January 1, 2014. Public workshops and meetings will be held frequently throughout Stage 3 to keep interested members of the public apprised of the progress made towards achieving fish recovery goals. Stage 3 will conclude once all activities called for in the Settlement are completed; however, on-going operations and maintenance of facilities and structures will continue indefinitely.

4.5.1 Restoration Flows and Monitoring Programs

The Restoration Flow release schedules and the amounts of acquired water will be determined using the decision making and accounting process developed in Stage 1 and documented in a Restoration Flows Procedures and Guidelines Report. The monitoring programs described in the FMP, Recovered Water Account Plan, and the Restoration Flows Guidelines will be implemented through 2025. Monitoring reports will be developed annually.

4.5.2 Construct the Remaining Program Features

The Engineering and Design Work Group will coordinate with the FMW and Real Estate specialists to develop detailed engineering designs appropriate for initiating construction contracts, complete the acquisition of temporary or permanent land easements or rights-of-way that are required for implementation, and complete the construction of all Phase 2 priority Program features identified in the Settlement as well as additional habitat restoration actions identified in the FMP. The FMW will help supervise the construction of channel improvements and habitat restoration. Public workshops and meetings will be held frequently throughout Stage 3 to keep interested members of the public apprised of the schedule of activities and the progress made related to construction activities. Separate site-specific environmental documents will be prepared prior to initiating the detailed engineering, design, and land acquisition processes for alternatives in the PEIS/R that were not analyzed in sufficient detail to initiate construction.

4.5.3 Real Estate Acquisition

This task will include the continuation of Stage 2 real estate acquisition services previously identified.

4.5.4 Stage 3 Milestones

Table 6. Stage 3 Milestones

Milestones	Date
Restoration Flow Release Schedules	Annual
Restoration Goal Progress Reports	Annual
Recovered Water Account Progress Reports	Annual
Restoration Flow Monitoring Reports	Annual

5.0 PROGRAM COSTS AND FUNDING

5.1 Costs

During the Settlement negotiations, several estimates were prepared for implementing the actions described in Paragraph 11 of the Settlement. These estimates ranged between $250 million and $800 million. Early in Stage 1, a more comprehensive assessment of the actions necessary and the related costs will be completed by the implementing agencies.

5.2 Funding Sources

The following funding sources have been identified as of early 2007:

Table 7, Funding Sources

Funding Source	Program Lifetime	Annually
CVPIA Friant Surcharge[1]		$8 million
Friant Capital Repayment[1]		$9 million
CVPIA Restoration Funds		$2 million
Federal Appropriation[1]	$250 million	
CA State Bonds (2006):		
Proposition 84	$140 million	
Proposition 1E	$60 million	
Total	$450 million	$19 million

[1] Requires new Federal authorization (such as H.R. 24, the San Joaquin Restoration Settlement Act)

6.0 PROGRAM PROCEDURES

6.1 Tracking

Program progress will be tracked through a Settlement Action Matrix grid (Attachment F) that identifies actions, responsible Parties and due dates between 2006 through 2025. These action items are identified in the Settlement, the State MOU, and proposed Federal legislative language. The Matrix will be continually updated and posted on the Program website.

6.2 Annual Progress Reports

The Program Manager will submit Progress Reports to the Secretary and the Governor beginning at the end of 2008 and continuing through the life of the Restoration program. These reports will describe the progress of the program in meeting the Restoration Goal and the Water Management Goal, including physical construction and modification and water management efforts relative to the timeline established in the Settlement. It will also include a budget review and projection for the remaining life of the project.

6.3 Budgeting

It is anticipated that the implementing agencies will have different financial reporting and budgeting requirements. However the Program will develop a cross-cutting budget to track multi-agency funding contributions that includes previous year's expenditures, current year budget, and estimates for the following year's expenditures. Financial status and predictions will have a cross-cut budget that tracks the following:

- Previous expenses;
- Current and one-year projected expenses; and
- Multi-agency contributions.

6.4 Information Management

Implementation of the Program necessitates the collection, analysis, and sharing of large volumes of physical and biological measurements, analyses, and reports. A systematic approach to collecting and managing this information is imperative to maintain cost controls and maximize use of the data for implementation activities and annual management decisions. The overall objective of the Program's information management solution will be to create a comprehensive logical structure to integrate spatial (geographic) and tabular data along with photographs, reports, and graphics from a variety of sources.

A Technical Memorandum entitled "Information Management Recommendations for the San Joaquin River Restoration Program" was prepared for the PMT to consider in developing the PMP. The Technical Memorandum includes an overview of anticipated information needs, existing data collection efforts, and existing data archives. The

Technical Memorandum recommends a distributed data model structure with a central data portal (website). The primary benefits of a distributed data model are: 1) data management is retained by the groups collecting and using the data; 2) structure encourages data standardization and provides easy access to all data and analysis results; and, 3) cost effective consolidation of high level IT staff into one group. The Technical Memorandum also includes several organizational recommendations to ensure that the required coordination occurs between all groups providing and utilizing information. The organizational recommendations include establishment of an information management coordinator and Work Group, assigning a data custodian for every major dataset, and designating DWR as the IT lead for database development and systems administration.

The PMT has immediate requirements including internal sharing of organizational communications and public sharing of documents and communications. The PMT has therefore already begun development of a website to post, share and exchange this project management related information. Some draft documents will be password-protected and available to individuals and teams working on the Program. The remainder of the website will be accessible to all interested persons and will include opportunities for public comment. This project management website can either remain stand-alone or be incorporated into the central data portal when it is developed.

6.5 Document Format and Styles

Documents and publications will follow consistent document and style formats, which have yet to be developed.

7.0 REFERENCES

Anadromous Fish Conservation Act

Central Valley Project Improvement Act

Clean Water Act

Endangered Species Act

Federal Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (WRC, 1983)

Federal Power Act

Fish & Wildlife Coordination Act

Migratory Bird Treaty Act

Natural Resources Defense Council, et al. v. Kirk Rodgers, et al, Stipulation of Settlement

SJRRP Public Involvement Plan

San Joaquin River Restoration Study Background Report (December, 2002)

Settling Parties Memorandum of Understanding (September, 2006)

Third Party MOU (February, 2007)