

**APPENDIX H**  
**Initial Project Management Plan**

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DRAFT INITIAL PROJECT MANAGEMENT PLAN  
SAN JOAQUIN RIVER MAINSTEM AND TRIBUTARIES, CALIFORNIA**

**PURPOSE AND SCOPE**

This Initial Project Management Plan identifies the work items and completion schedules required for the feasibility phase of the San Joaquin Mainstem and Tributaries, California study. The plan also provides an estimate of the study cost. The result of this phase will be a Feasibility Report that may recommend an environmental restoration/flood control plan for implementation. In order to clarify cost-sharing responsibilities, the study obligations of the Corps of Engineers and the non-Federal Sponsor (the Department of Water Resources of the State of California) are outlined in accordance with the Water Resources Development Act of 1986.

**DESCRIPTION OF THE STUDY AREA**

The study area includes the San Joaquin River from Friant Dam downstream to Stockton and the major tributaries up to the first flood control dam. The area also includes the north fork of the Kings River from the southern boundary of the James Reclamation District 1606 to Mendota Dam.

**FEASIBILITY STUDY COORDINATION**

The feasibility study will be managed by an Executive Committee and a Study Management Team, as provided by Article V of the FCSA. The Executive Committee will manage the overall study by (1) maintaining a working knowledge of the feasibility study, (2) assisting in resolving emerging policy issues, (3) assuring that evolving study results and policies are consistent and coordinated, (4) directing the Study Management Team, and (5) ratifying decisions made by the Study Management Team.

The Study Management Team will consist of a Corps study manager, project manager, and staff personnel from the Sponsor and their cost-sharing partners. It may also include representatives from other Federal, State, and local agencies, interested organizations, and individuals. The Study Management Team will establish the roles of each staff level participant, and oversee the study to ensure the attainment of study objectives.

**PLANS FOR FUTURE STUDY**

Reconnaissance studies identified flooding problems and the need for environmental restoration within the study area. Based on the results of the reconnaissance phase and input from the Sponsor and their cost-sharing partners, feasibility studies will investigate environmental restoration with flood control alternatives along the San Joaquin River.

## **WORK TASKS AND RESPONSIBILITIES**

Feasibility studies will concentrate on the environmental restoration with flood control alternatives with a focus on formulating and optimizing the alternative for implementation. The following is a brief description of the major feasibility phase tasks and the responsibilities for accomplishment of these tasks. At the beginning of each task, the non-initiating agency, either Corps or Sponsor, may review any planned in-kind work or contract of the other for adequacy. At the conclusion of each task, the non-initiating agency may review and approve the results of the work before it is considered complete. Review and assessment of the adequacy of the task will be accomplished by the Study Management Team and its technical staff. The major study tasks and their expected costs are summarized in Table 1.

## **STUDY MANAGEMENT**

This task will be accomplished by the Corps in coordination with the Sponsor and in accordance with current Corps regulations and guidelines. It includes all activities related to study management, such as study scheduling, providing detailed information for the work done by others, monitoring and modifying assigned work items as required, reviewing results and reports provided by the technical support staff, and coordinating with other Corps offices. Budget preparation, correspondence, inter-organization coordination, and point-of-contact responsibilities are also part of the management program. Periodic meetings will be held between the Corps and the Sponsor to report on the status of the study and possible in-kind services, and monthly status reports and financial monitoring will be provided by the Corps. Assistance and technical studies and technical coordination will also be provided. The general direction and condition of the study will be managed and monitored at all times.

Study management will ensure that all required tasks and coordination are performed. The study management structure developed during the reconnaissance phase will continue into the feasibility phase and include coordination efforts associated with the Study Management Team and Executive Committee. Coordination with the San Joaquin River Management Program will continue.

## **PLAN FORMULATION**

This task includes reviewing and refining the plans selected for study during the feasibility phase and developing required alternatives including no action and nonstructural plans. This task also includes identifying the NED plan associated with incremental flood control features, considering environmental impacts and the views of the public, and formulating mitigation measures. The costs and benefits associated with each plan will be determined, and trade-offs required to select the recommended plan for implementation will be identified.

The annual and periodic activities and responsibilities for operating and maintaining the completed project will be described and closely coordinated with other requirements (e.g., cost estimates and environmental monitoring). The general magnitude of these activities will be described for all alternatives studied in detail; however, more detail will be provided for the alternative(s) recommended for implementation. All requirements of 33 CFR 208 and other Federal regulations specifying operation and maintenance requirements will be clearly described so that the Sponsor's future duties will be known.

This task will be primarily a Federal responsibility.

#### **PUBLIC INVOLVEMENT**

Responsibility for this task will be shared between the Corps and the Sponsor. This task primarily consists of coordinating the study scope and results with the public, conducting public meetings and workshops, and responding to public inquiries. Preparation of a public involvement plan will be completed upon initiation of the feasibility study. This plan will guide activities throughout the studies.

The Corps and Sponsor will jointly coordinate public involvement activities. The lead agency for specific activities will be identified in the public involvement plan. The Corps will provide the Notice of Initiation of the feasibility study, maintain a mailing list, and provide public information summaries toward the end of the study. For each specific activity the non-lead agency will assist the lead agency with local coordination, preparation and conduct of public meetings, coordination with special interest groups, local task forces, and local news media.

#### **SURVEYS AND MAPPING**

This work will include review of existing surveys and maps of the study area, aerial photographs of the existing topography, and field measurements of the channel and levee geometry (cross sections and elevations) in the project reach. Additional cross section of the mainstem San Joaquin River will be acquired, as well as topographic information for the environmental restoration sites.

#### **HYDROLOGY & HYDRAULICS**

Hydrology work item includes studies determining flow-frequency relationships, wind setup and wave run-up, channel infiltration losses, other pertinent hydrological data, and documentation of the results in a hydrology report. This evaluation will estimate existing and expected with- and without-project condition hydrology in the study area. Hydrologic analysis will be conducted to determine any increases in peak flow and peak volume that may occur under project conditions downstream of the project area.

Hydraulic analyses (HEC-2) will be conducted along the mainstem San Joaquin River from Highway 99 near Stockton to Friant Dam. Water surface profiles for four frequency events will be developed for the mainstem river from Friant Dam downstream to Stockton. Hydraulic analysis will consider both in channel and overbank flow in the various reaches of the river. In addition, definition and identification of a normal water surface elevation will be accomplished. Water surface profiles will also be developed for flows at which seepage begins to occur.

#### **FLOODPLAINS**

This work will involve development of pre-project flood plains for four different flood frequencies. Flood plain boundaries and depths of flooding will be furnished. All flood plains to be evaluated will be the result of failure of the mainstem river system only. Residual flooding from local sloughs will be identified but not extensively modeled. No detailed information will be furnished for other streams in the study area. Approximate routing models (peak flows) will be developed to show major flow paths along the mainstem San Joaquin River. A technical write-up will be prepared describing the basis of the hydraulic study.

#### **RESERVOIR CONTROL**

Hydrologic modeling will be carried out to determine the effectiveness of diverting floodwaters to various areas along the mainstem San Joaquin River. Modeling will be carried out to optimize flood control operations with environmental objectives for the flood diversion areas. Investigations will be coordinated with latest hydraulic modeling to consider actual channel capacities, infiltration rates, and other pertinent parameters. Studies will include a review of recent Water Resources Control Board water rights decisions and their impact on flow requirements within the river, and their impact to potential diversions to areas adjacent to the mainstem river. An operation plan for diversion to areas will be developed considering any restrictions that may be imposed through decisions of the State Water Quality Control Board.

In addition, a system wide evaluation of the operations of the system will be carried out to determine if better ways can be developed to optimize flood control operations and other purposes with environmental restoration purposes. This evaluation will focus on modifications that could be done to operations of reservoirs and facilities under the control of Federal or State agencies within the basin as coordinated with operations of facilities under the control of other private or public entities. This analysis will consider the impacts of recent Water Resources Control Board water rights decisions.

## **GEOTECHNICAL STUDIES**

Review of previous geotechnical studies of the area, including existing soils engineering data will be performed. Study tasks include field reconnaissance, development of a exploration and laboratory program, a geologic report addressing seismicity, areal and regional geology, a determination of potential levee failure points for the purpose of flood plain analysis, and preparation of a narrative report summarizing all studies. Areas of investigation should focus on areas identified in the reconnaissance investigations where levee stability problems exist related to foundation or soil conditions that cannot be attributed to lack of operation and maintenance. Analysis will include alternatives for the correction of these stability problems and constructibility of alternative methods of levee improvement.

## **GEOMORPHIC, SEDIMENT ENGINEERING AND CHANNEL STABILITY ANALYSES**

Recent technical studies of the project reach have indicated that channel aggradation through the project reach has the potential for detrimental impacts on the functioning of the Lower San Joaquin River and Tributaries Project system. Feasibility studies will include review of previous geomorphic, sediment and channel stability studies of the area. Study tasks in the project reach include field reconnaissance (borings, sample collection and cross section surveys), geomorphic analysis, sediment engineering analysis (sediment yield, routings and budget), and preparation of a narrative report summarizing all studies.

## **DESIGN**

This task will be conducted by the Corps. It will include design and cost estimates of all alternative plans, structures, relocations, and estimates of average annual operations, maintenance, and replacement costs. The studies will be prepared in accordance with EC 1110-2-268, "Engineering and Design for Civil Works Projects."

Hydraulic design work will include developing design water surface profiles for analysis of project features with required levee and/or channel freeboard, determining the need for erosion protection, and evaluating the potential for inducing flooding upstream and downstream of the project reach. This work will incorporate the results of the geomorphic and sediment engineering studies.

Preliminary construction procedures, construction sequencing, operation and maintenance, and water control plans will be developed. Constructibility reviews with USACE construction elements will be conducted. Preconstruction engineering and design and construction schedules will be prepared. An assessment of the presence of hazardous, toxic, and radioactive waste sites within the construction area will be prepared. If any sites are

identified in the project reach, further detailed studies will be conducted to determine the impacts, if any, of these sites on project features.

An appendix to the Feasibility Report will be prepared summarizing the design studies.

#### **COST ENGINEERING**

Detailed first and annual baseline costs, including operation and maintenance and replacement, will be developed in the MCACES format. The estimates will be prepared in accordance with EC-1110-2-538, "Civil Works Project Cost Estimates#- Code of Accounts," EC 1110-2-263, "Civil Works Construction Cost Estimating," and EC 11-2-157, "Fully Funded Estimate." A detailed basis of estimate and sensitivity analysis will be developed. All estimates shall be prepared as fully funded costs.

#### **ECONOMIC STUDIES**

This task consists of evaluating flood damages, flood damage reduction benefits, and potential benefits associated with other incidental purposes.

The amount of flood-damageable property estimated in the reconnaissance report will be supplemented with an inventory of the flood plain. A computer model that helps define the relationships between damageable property and flood events will be refined to develop feasibility level estimates of average annual flood damages that occur with and without the proposed plans. Transportation information, emergency cost savings, and impact of the recommended plan on Federal Emergency Management Agency requirements will be included in this estimate.

These studies will assist in measuring flood control benefits and sizing proposed projects. An economic report will be provided for inclusion in the Feasibility Report.

#### **ENVIRONMENTAL STUDIES**

This task includes collecting environmental data that define existing and future conditions. The alternatives studied in detail will be evaluated, and the environmental impacts and mitigation features will be identified. Restoration benefits will be quantified. Requirements of Section 7 of the Endangered Species Act will be completed during the feasibility study, including a biological assessment and formal consultation with the U.S. Fish and Wildlife Service (FSW) and the California Department of Fish and Game, if necessary.

The Environmental Evaluation prepared in the reconnaissance phase will be expanded into Draft and Final Environmental Impact Statements that will evaluate the environmental effects of the alternative plans. This report will be coordinated with Federal,

State, and local governments and agencies as well as interested groups and individuals.

Environmental restoration and mitigation features for fish and wildlife and other affected resources will be refined and a monitoring program developed. Any land required for mitigation will be identified. A plan will be developed for fish and wildlife resources mitigation. A monitoring plan will be developed to record the success of the mitigation measures.

A Section 404b(1) evaluation of water quality impacts will be accomplished and coordinated with State and Federal water quality agencies to ensure adequate consideration has been given to water quality and acquire water quality certification.

Environmental evaluations will include a comprehensive river corridor survey of riparian and other habitat vegetation types along the river. Areas where restoration of habitat is suitable will be identified. Evaluations of the environmental needs of the river corridor will be coordinated with flood control and other purposes.

#### **FISH AND WILDLIFE STUDIES**

This task includes studies conducted by the FWS in support of the Environmental Studies by agreement with the Corps as required by the Fish and Wildlife Coordination Act. The FWS will form an interagency team to conduct a Habitat Evaluation Procedure (HEP) and other similar studies to define impacts and determine the amount of required mitigation. In these studies, baseline conditions and project-induced environmental effects will be evaluated, and types and amounts of mitigation for habitat losses will be determined. This task also includes management of the FWS work agreement. A FWS Coordination Act Report will be prepared that will refine environmental effects of the selected alternative, summarize the HEP and other studies findings, and incrementally analyze alternative mitigation strategies acceptable to the FWS for all alternatives studied in detail.

#### **CULTURAL RESOURCES STUDIES**

The cultural resources studies to be performed by the Corps will determine the impacts of the alternative plans on historical, architectural, and archeological resources. All studies will be conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, 36 CFR 800 "Protection of Historic Properties," and Corps ER 1105-2-100.

In consultation with the State Historic Preservation Officer (SHPO), the Corps will conduct sufficient archival and field surveys to identify cultural sites within the study's Area of Potential Effect (APE) and will evaluate the eligibility of all cultural sites for the National Register of Historic Places. A detailed report will be prepared which will describe all cultural

resources within the APE and assess the impacts of each project alternative on these resources. The report will also describe the range of additional future preservation or mitigation efforts and the associated costs of these studies.

If project alternatives are found that will have an effect on sites eligible for the National Register, the Corps will proceed with further consultation with the SHPO and will afford the Advisory Council on Historic Preservation and other interested parties an opportunity to comment. If necessary, the Corps may enter into a Memorandum of Agreement with the SHPO, Advisory Council on Historic Preservation and Sponsor to stipulate ways to avoid or reduce the effects of project alternatives on cultural resources. Preservation or mitigation of cultural resources will be considered in more detail for the plan recommended for construction in any advanced planning for the project.

#### **REAL ESTATE STUDIES**

This task will be performed by the Corps. It will include a appraisal of land costs and damages required for economic evaluations of alternative plans. Determination of lands, easements, and rights-of-way for the recommended plan will also be included. Rights of entry will be obtained as may be necessary for cultural, environmental, and engineering studies. Detailed identification of ownership and tentative real estate maps based on project design and mitigation requirements will be developed in accordance with current Corps regulations and guidelines. Costs, including acquisition and administrative, will be identified in the Code of Accounts format.

Real estate studies will be carried out at two levels. First, preliminary estimates of all alternatives will be carried out. Based upon this information a screening of alternatives will be carried out. Any final alternative(s) identified for carrying forward will be analyzed at a more detailed feasibility level.

#### **INSTITUTIONAL STUDIES**

This task will be accomplished by the Corps and will consist of determining the financial and legal arrangements required to implement the recommended plan, including methods of financing. A financial capability analysis will examine whether the Sponsor has the financial capability to undertake the required financial obligations for implementation of the project. Studies include determining the political and institutional arrangements of the study area and identifying local views and procedures regarding the management and use of the resources. The results of the study will be provided in a financial and cost recovery analysis section of the Feasibility Report.

## REPORT PREPARATION

This task will be the responsibility of the Corps in coordination with the Sponsor, and the work includes assembling pertinent data, writing, editing, typing, drafting, reviewing, revising, reproducing, and distributing the draft and final feasibility reports, Environmental Impact Statements, and related technical documents.

This task also includes work items necessary to support the review process from the signing of the feasibility report to the request by the Assistant Secretary of the Army for Civil Works (ASA(CW)) to the Office of Management and the Budget (OMB) for the views of the administration. These items could also include answering comments, attending review meetings, and revising the report.

## STUDY CONTINGENCY

This item covers any requirements for additional rewriting, reformulation, or documentation as a result of Washington-level review. Any costs that are incurred after the end of the feasibility phase (i.e., submittal of the report to the OMB by the ASA) but prior to Preconstruction Engineering and Design will be 100 percent Federal.

## FEASIBILITY STUDY COSTS ESTIMATE

The study cost estimate for the feasibility phase is \$3,000,000. All feasibility phase study costs are required to be cost shared between the Corps and Sponsor on a 50-50 basis. Further, the Sponsor will provide, as a minimum, half of its share as a cash contribution. Table 1 outlines tasks to be performed, estimated cost of each task, and study obligations for the Corps and Sponsor.

The cost estimate for the feasibility study will be separated into fiscal years and quarters. Table 2 outlines the costs for each quarterly period during the feasibility study. The Corps will provide periodic reports to the Sponsor, which would include "Selective F&A Data Base Record, Form 666." The Sponsor will provide the Corps, on a quarterly basis, similar finance and accounting data that will record the work-in-kind efforts by the Sponsor. The value of the in-kind services will be based on the equivalent government cost.

## FEASIBILITY STUDY SCHEDULE

The final Feasibility Report and Environmental Impact Statement are scheduled to be submitted to the Western Division in about ?? months after the signing of the Federal Cost Sharing Agreement (FCSA). It is expected that processing the Feasibility Report (Washington-level review), terminating with provision of

the report to the OMB, will take up to an additional ?? months (total study period of ?? months).

#### **COORDINATION BETWEEN THE CORPS AND SPONSOR**

The Executive Committee is scheduled to meet, at a minimum, at the signing of the FCSA, at the public meeting, and at the concluding Feasibility Review Conference. The Executive Committee will also meet periodically to discuss the project status and to handle changes in study scope that would result in an increase in total study cost or major changes in study direction, and at required Issue Resolution Conferences, if necessary. The Study Management Team will meet about every 6 weeks.

Financial coordination will include quarterly financial statements composed of expenditures and obligations. The Corps will also provide quarterly reports to the Sponsor, which would include "Selective F&A Data Base Record, Form 666." The Sponsor will provide the Corps, on a quarterly basis, similar finance and accounting data that will record cash expenditures and work-in-kind efforts by the Sponsor and the Sponsor's associates. Cost-sharing cash payments will be made to the Corps on or about [list quarterly dates]. The first payment will be made upon initiation of the study for the amount expected to be expended during the time until the next scheduled payment as outlined above. A final reconciliation of the cost-sharing cash payment will be made at the conclusion of the study. The Corps will also furnish to the Sponsor a monthly progress report, detailing the status of each study task.

**TABLE 1  
FEASIBILITY STUDY COST ESTIMATE  
SAN JOAQUIN RIVER MAINSTEM, CALIFORNIA**

Cost Actg No	Task	Corps	Sponsor	Contract	Total**
01	Public Involvement	25,000	25,000	0	50,000
13	Study Mgmt.*	100,000	100,000	0	200,000
02	Institutional Studies	7,500	7,500	0	15,000
14	Plan Formulation	25,000	25,000	0	50,000
07	Economic Studies	37,500	37,500	0	75,000
11	Design	82,500	82,500	0	165,000
	Reservoir Control	20,000	20,000	0	40,000
	Hydrology and Hydraulics	250,000	250,000	0	500,000
08	Surveys and Mapping	100,000	100,000	250,000	450,000
10	Geotechnical	37,500	37,500	75,000	150,000
11	Cost Engineering	12,500	12,500	0	25,000
09	Floodplain	125,000	125,000	0	250,000
05	Environ. Resources Studies	75,000	75,000	300,000	450,000
06	Fish and Wildlife Studies	0	0	75,000	75,000
04	Cultural Resources Studies	25,000	25,000	0	50,000
12	Real Estate Studies	67,500	67,500	0	135,000
15	Report Preparation	75,000	75,000	0	150,000
Subtotal		1,065,000	1,065,000	700,000	2,830,000
Study Contingency		106,500	106,500	70,000	283,000
Total		1,171,500	1,171,500	770,000	3,113,000

\* Feasibility Study Management includes study management, program management, and project management activities.

\*\* Total figures include hired labor, overhead, and contract amounts.