

CENTRAL VALLEY FLOOD PROTECTION BOARD MEETING

Friday, December 2, 2011

11:00 AM

BOARD SPONSORED PROJECTS AND STUDY AGREEMENTS

Central Valley Integrated Flood Management Study

**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

1. STAFF REPORT WITH LOCATION MAP

Central Valley Flood Protection Board
October 28, 2011

Staff Report

**Central Valley Integrated Flood Management Study Approval of Amendment No. 1
to Feasibility Cost Sharing Agreement**

1.0 – BOARD ACTION

Consider approval of Resolution No. 11-28 (Attachment A) to approve:

- 1.1 Amendment No. 1 to the Central Valley Integrated Flood Management Study Feasibility Cost Sharing Agreement (FCSA) between the U.S. Army Corps of Engineers, the Department of Water Resources, and the Central Valley Flood Protection Board in substantially the form attached hereto.
- 1.2 Delegating to the Board President the authority to execute the amendment in substantially the form attached hereto.

2.0 – APPLICANT

Federal: U.S. Army Corps of Engineers, Sacramento District (USACE)
State: Central Valley Flood Protection Board/ Department of Water Resources
Local: N/A

3.0 – LOCATION

The study is being conducted in the Central Valley of California in the watershed boundaries of the Sacramento and San Joaquin Rivers. For planning and analysis, and consistent with legislative direction of the non-federal sponsors, two geographical planning areas are important for the CVIFMS development and CVFPP coordination, as follows:

State Plan of Flood Control Planning Area (SPFC) – The SPFC area is defined by the lands receiving protection from facilities of the SPFC.

System-Wide Planning Area—This area includes the lands that are subject to flooding under the current facilities and operation of the Sacramento-San Joaquin River Flood Management System (Water Code Section 9611). The SPFC Planning Area is completely contained within the System-Wide Planning Area.

4.0 – DESCRIPTION

Amendment No. 1 would adjust *Article 1 – Methods of Payment*, of the existing FCSA which has a total study cost estimate of \$43,440,000, carried out over a five-year duration, cost shared equally (50 percent/ 50 percent) between the Federal and non-federal partner (State). The State contribution is \$21,520,000 and may be met through 100% in-kind services, thus there is no cash contribution required from the State. These in-kind services include products necessary for the preparation of the CVFPP.

This total study cost estimate included in Amendment No. 1 was developed through a collaboration between the State and the USACE under the PMP process and represents the USACE's five-year scope of work which is aligned with the CVFPP legislative requirement of providing the first report in 2012 and a subsequent 5-year implementation report in 2017. The USACE will be preparing a Programmatic Implementation Framework Document (due in early 2012) and a Programmatic Feasibility Study (due in 2017) with associated joint CEQA/NEPA documents to support the federal interest in the CVFPP for future efforts within the Sacramento and San Joaquin River Watersheds and Delta.

5.0 - BACKGROUND

In response to the devastating floods of 1997 in the Sacramento and San Joaquin River Basins, the State Legislature and Congress approved and appropriated funding to initiate a comprehensive flood management study with emphasis on flood damage reduction and associated environmental restoration. The Sacramento and San Joaquin River Basins Comprehensive Study (Comprehensive Study) was initiated in February 1998 with the signing of an initial FCSA between the USACE and Reclamation Board (now Central Valley Flood Protection Board). The cost of the study was equally shared between the State and USACE. An Interim Report on the Comprehensive Study was completed December 2002. The February 1998 FCSA expired on February 2009. The Central Valley Integrated Flood Management Study (CVIFMS) is being carried out under the same authority of the Comprehensive Study.

The destruction and loss of life resulting from Hurricane Katrina in 2005 raised public awareness of catastrophic floods throughout the nation. In response, California voters passed two bond acts in 2006 to provide funding for flood management improvements, and in 2007, the California legislature passed five interrelated bills aimed at addressing flood protection and liability. Through this legislation, DWR was directed to develop and the CVFPB to adopt a Central Valley Flood Protection Plan (CVFPP), and to collaborate with the USACE in preparing the CVFPP.

The CVFPP will develop a sustainable and integrated flood management plan for areas protected by facilities of the State/federal Flood System, primarily defined as the State

Plan of Flood Control (SPFC) which includes features and facilities within the Central Valley for which the Board has given assurances to the USACE. The CVIFMS is the federal complement to the CVFPP and is focused on shared opportunities to reduce flood risk in an integrated water resource and flood management context.

On August 28, 2009, the Board and DWR entered into a *Memorandum of Understanding* to jointly work with the USACE as the non-federal partner under CVIFMS. This was followed by the USACE, DWR, and the Board entering into a three-way Feasibility Cost Share Agreement for CVIFMS on August 21, 2010. The total study cost associated with this initial agreement was \$1,720,000, cost-shared equally with the State to provided funding for the development of a Project Management Plan (PMP) that would outline the longer-term funding estimates, scopes of work and timelines for completion of the CVIFMS, with future funding for a five-year feasibility study to be provided in a subsequent amendment of the FCSA. This Amendment No. 1 reflects this planning effort and State-federal collaboration.

A map of the Central Valley study area is attached. The project area for CVIFMS is essentially coincident with that for the State CVFPP.

6.0 – AUTHORIZATIONS

Federal: Flood Control Act of 1962, Section 209 (Public Law 87-874) and of the San Joaquin River Basin pursuant to May 8, 1964 resolution of the House Committee on Public Works
State: California Water Code Sections 8590, 9603, 9616, 12580

7.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

- 1) Approve Amendment No. 1 to the existing FCSA; and
- 2) Delegate to the Board President the authority to execute the agreement.

8.0 – LIST OF ATTACHMENTS

- A Resolution No. 11- 28
- B. Location Map
- C. Power Point
- E. FCSA Amendment No. 1
- F. Existing Feasibility Cost Share Agreement (FCSA)

- G. Project Management Plan
- H. USACE CVIFMS Overview

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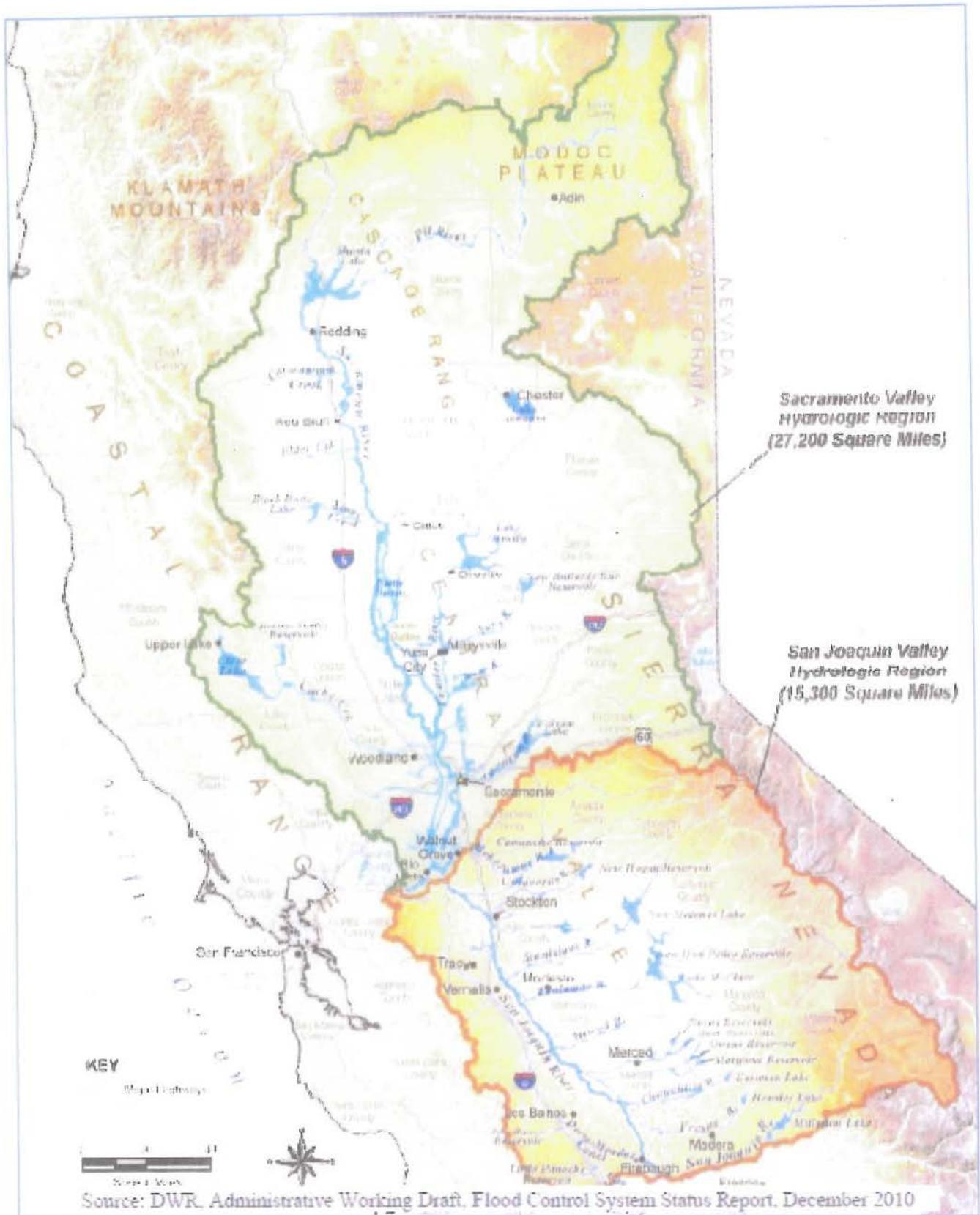


Figure 1. Central Valley Integrated Flood Management Study - Study Area

**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

2. RESOLUTION

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

RESOLUTION NUMBER: 11- 28

CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY (CVIFMS)
APPROVAL OF AMENDMENT NO. 1 TO THE FEASIBILITY COST SHARING
AGREEMENT

WHEREAS, on August 28, 2009, the Central Valley Flood Protection Board (Board) and the Department of Water Resources (DWR) entered into a *Memorandum of Understanding between The Central Valley Flood Protection Board and the Department of Water Resources Regarding Central Valley Integrated Flood Management Plan*, to jointly participate with the U.S. Army Corps of Engineers (USACE) in the Central Valley Integrated Flood Management Study (CVIFMS), formerly the Sacramento and San Joaquin River Basins Comprehensive Study (Comprehensive Study), as the non-federal partner under CVIFMS; and

WHEREAS, the purpose of the CVIFMS is to conduct a comprehensive investigation of flood and related ecosystem issues of the Sacramento and San Joaquin River Basins and to develop a comprehensive approach to flood management for the two river basins through a three-party Feasibility Cost Share Agreement (FCSA) among the USACE, DWR, and the Board; and

WHEREAS, on July 21, 2010, the Board and DWR entered into an FCSA with the USACE for the CVIFMS Programmatic Implementation Framework Document and Programmatic Feasibility Study under the authority for the Comprehensive Study pursuant to House Report 105-190 of the Energy and Water Development Appropriations Act of 1998 (PL 105-62); and for the Sacramento River Basin under Section 209 of the Flood Control Act of 1962 (Public Law 87-874) and the San Joaquin River Basin pursuant to San Joaquin River and Tributaries, May 8, 1964 Resolution of the House Committee on Public Works; and

WHEREAS, it is recognized and agreed that the State's funding contribution and participation may be in the form of up to 100% In-Kind Contributions (IKC); and

WHEREAS, the USACE has completed a Project Management Plan (PMP) for the CVIFMS and has requested that the FCSA be amended in *ARTICLE IV – Method of Payment*, based on the detailed PMP findings reached in collaboration with DWR and Board staff; and

WHEREAS, the total study cost initially estimated in *ARTICLE IV* as \$1,720,000 be amended to \$43,440,000 - an increase of \$41,720,000, and that the non-federal proportionate share initially projected as \$860,000 be amended to \$21,520,000 - an increase of \$20,660,000.

NOW, THEREFORE, LET IT BE RESOLVED that the Central Valley Flood Protection Board:

1. Approves Amendment No. 1 to the Agreement between the Board, DWR and the USACE for the Central Valley Integrated Flood Management Study in substantially the form attached hereto.
2. Delegates to the Board President the authority to execute the amendment in substantially the form attached hereto.

BY: _____
Benjamin F. Carter, President
Central Valley Flood Protection Board

Date: _____

BY: _____
Francis "Butch" Hodgkins, Secretary

Date: _____

Approved as to Legal Form and Sufficiency

Jeremy D. Goldberg
Legal Counsel
State of California, Department of Water Resources

Date: _____

**PROJECT: Central Valley Integrated Flood Management Study -
FCSA Amendment No. 1**

3. AMENDMENT NO. 1 TO FCSA

AMENDMENT NUMBER 1
TO THE
AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CENTRAL VALLEY FLOOD PROTECTION BOARD
AND
THE STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES
FOR THE
CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY

THIS AMENDMENT is entered into this _____ day of _____, 2011, by and between the Department of the Army (hereinafter the "Government"), represented by the Sacramento District Engineer and the Central Valley Flood Protection Board, represented by its President and the State of California Department of Water Resources, represented by the Division Chief of Flood Management (hereinafter "Non-Federal Sponsors").

WITNESSTH, THAT:

WHEREAS, the Corps of Engineers is authorized to conduct a feasibility study of Sacramento River Basin pursuant to Section 209 of the Flood Control Act of 1962 (Public Law 87-874) and of the San Joaquin River Basin pursuant to May 8, 1964 resolution of the House Committee on Public Works (hereinafter the "Study");

WHEREAS, the Government and the Non-Federal Sponsor entered into a Feasibility Cost Share Agreement (hereinafter referred to as the "Agreement") on July 21, 2010, for completion of the Study; and

WHEREAS, the total Study cost estimate has increased from the previous estimate of \$1,720,000 to \$43,440,000, increasing the non-federal cost share from \$860,000 to \$21,520,000;

WHEREAS, the estimated non-federal in-kind contributions will increase from \$860,000 to \$21,520,000 and the non-federal cash contribution will remain at \$0;

WHEREAS, the Government and Non-Federal Sponsors have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost sharing and financing of the *Study* in accordance with the terms of this Amendment;

NOW, THEREFORE, the Government and the Non-Federal Sponsor agree to amend the Agreement as follows:

1. ARTICLE IV – METHOD OF PAYMENT

Paragraph A.1 is replaced with the following paragraph:

"1. As of the effective date of this Agreement, *total study costs* are projected to be \$43,440,000; the amount of funds determined in accordance with Article II.C.1.a. of this Agreement is projected to be \$21,520,000; the costs included in *total study costs* for the *non-Federal in-kind contributions* determined in accordance with Article II.E. of this Agreement are projected to be \$21,520,000; the credit to be afforded for the *non-Federal in-kind contributions* pursuant to Article II.F. of this Agreement is projected to be \$21,520,000; the Non-Federal Sponsor's contribution of funds required by Article II.C.1.b. of this Agreement is projected to be \$0; and the non-Federal proportionate share is projected to be 50 percent. These amounts and percentage are estimates subject to adjustment by the Government, after consultation with the Non-Federal Sponsors, and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsors."

IN WITNESS WHEREOF, the parties hereto have executed this amendment to the Agreement, which shall become effective upon the date it is signed by the authorized representative of the Government.

DEPARTMENT OF THE ARMY

CENTRAL VALLEY FLOOD
PROTECTION BOARD

BY: _____
William J. Leady, P.E.
Colonel, U.S. Army
District Commander

BY: _____
Benjamin F. Carter
President
Central Valley Flood
Protection Board

DATE: _____

DATE: _____

CALIFORNIA STATE DEPARTMENT
OF WATER RESOURCES

BY: _____
Eric S. Koch
Acting Chief, Division of Flood Management
Department of Water Management

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the Assistant Chief Counsel of the State of California Department of Water Resources, that the State of California Department of Water Resources is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the State of California Department of Water Resources, and the Central Valley Flood Protection Board in connection with the Central Valley Integrated Flood Management Study, California, and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement, as required by Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended (42 U.S.C. 1962d-5b), and that the persons who have executed this Agreement on behalf of the State of California Department of Water Resources have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
_____ day of _____ 2011.

Ward Tabor
Counsel for
The State of California
Department of Water Resources

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Eric S. Koch
Acting Chief, Division of Flood Management
State of California Department of Water Resources

DATE: _____

CERTIFICATE OF AUTHORITY

I, _____, do hereby certify that I am the principal legal advisor of the Central Valley Flood Protection Board ("Board") for this project, acting on behalf of the State of California, that the Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army, the State of California and the Board in connection with the Central Valley Integrated Flood Management Study, and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement, as required by Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended (42 U.S.C. 1962d-5b), and that the persons who have executed this Agreement on behalf of the State of California, through the Board have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this _____ day of _____ 2011.

Jeremy D. Goldberg
Legal Counsel
State of California, Department of Water Resources

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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BY: _____

Benjamin F. Carter, President
Central Valley Flood Protection Board

DATE: _____

**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

4. POWER POINT PRESENTATION





**US Army Corps
of Engineers®**



**Central Valley Integrated
Flood Management Study
FCSA Amendment No. 1**

Central Valley Integrated Flood Management Study (CVIFMS)

**Agenda Item 8-A
Resolution 11-28**

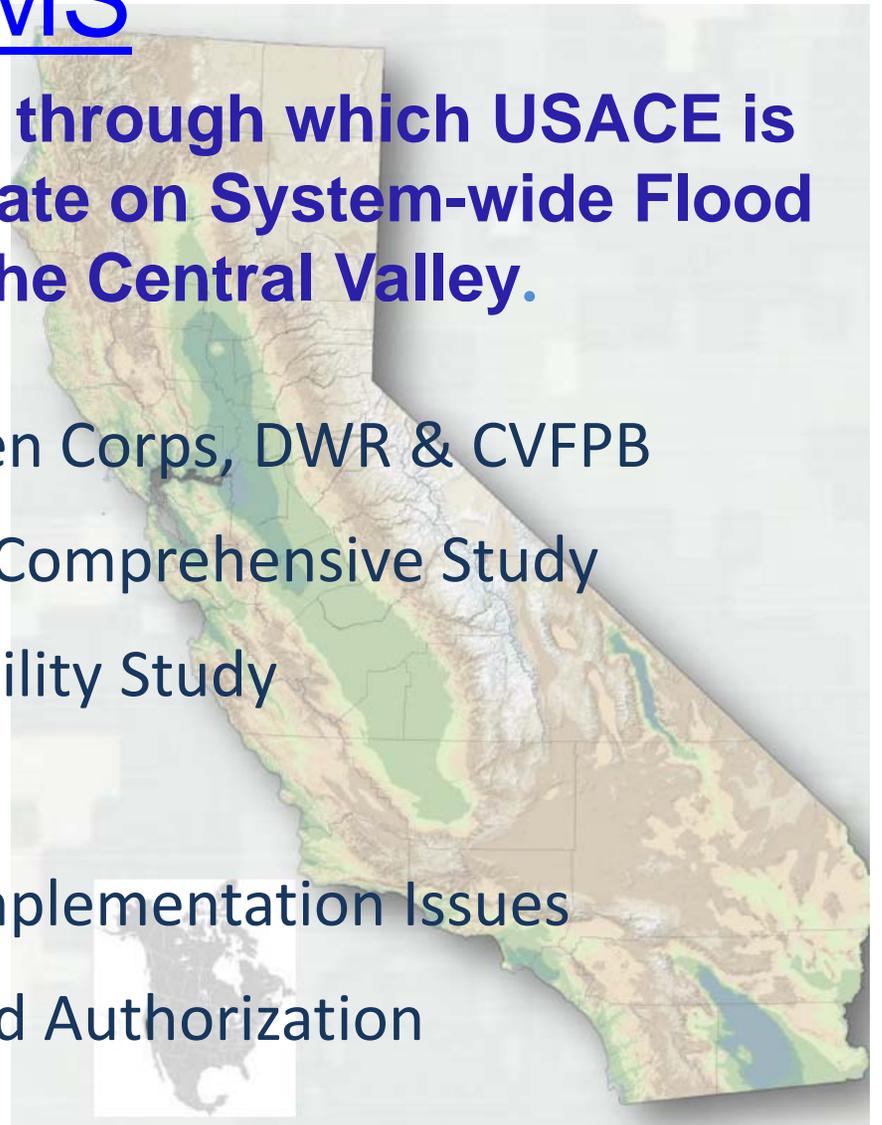
Amendment No. 1 to Feasibility Cost Share Agreement

December 2, 2011

CVIFMS

CVIFMS is the primary vehicle through which USACE is collaborating with the State on System-wide Flood Risk Management in the Central Valley.

- Three Party Agreement Between Corps, DWR & CVFPB
- Same Federal Authority as the Comprehensive Study
- State/Corps Cost Shared Feasibility Study
- Defines Federal Interest in SSIA
- Refines and Resolves Critical Implementation Issues
- Vehicle for SSIA to Congress and Authorization



CVIFMS TIMELINE



1998 – 2002 Comprehensive Study

2006 – 2009 State Initiatives and Legislation

CWC 9615 & 9620 - Collaborate with the USACE

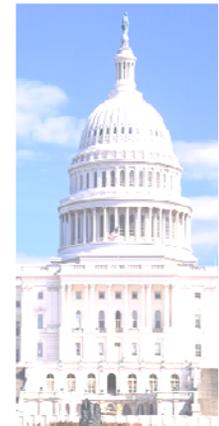
CPRC 5096.820 & SB 85 - Maximize Federal Funding.

FY2009, 10, 11 Congress appropriates funds to CVIFMS

2009 CVFPB and DWR sign MOU for CVIFMS

2010 CVFPB/DWR send USACE *Letter of Intent as CVIFMS non-federal (NF) sponsor*

2010 FCSA for CVIFMS signed - DWR, CVFPB, USACE



* CVFPB/ USACE Sacramento and San Joaquin River Basins, California Comprehensive Study



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY

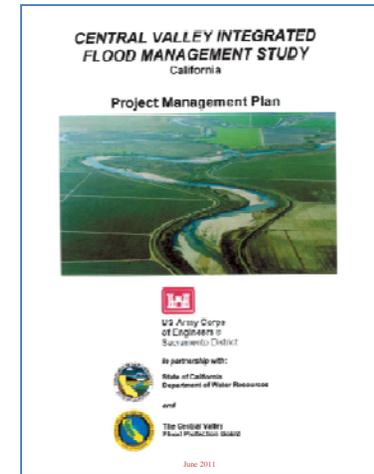


First Phase CVIFMS

FCSA Approved July 21, 2010

Initial \$1.7 Million For Two Efforts:

1. CVFPP 2012 Federal Companion Document
2. Develop Scope, Cost, & Schedule For Second Phase



Project Management Plan Completed in 2011

USACE/DWR request **Amendment No. 1** to FCSA
for Second Phase Total Study Cost estimate.



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



Amendment No. 1 for Second Phase CVIFMS

- Prepare 5-Year CVIFMS Feasibility Study
- Total Cost Estimated of \$43.4 Million
- Cost Share – 50/50 Share

Federal \$21.9 Million – Federal Appropriation

State \$21.5 Million – State’s 50 Percent Share to be
Work In-Kind, No Cash

State In-kind Contribution Sources

DWR Technical Efforts

- Hydrology
- Reservoir Operations
- Channel Evaluations (hydraulics)
- System Levee Performance
- Floodplain Hydraulics
- Economic Damages
- Ecosystem Functions
- Life Safety and other Benefits
- Preliminary Designs and Costs



CVIFMS STATE/FEDERAL PARTNERSHIP BENEFITS

- **Information Sharing to Ensure Consistency and Coordination**

- Tools and data from past and on-going studies
- Interagency technical Workgroups
- Planning and Strategy Workgroups
- Coordinated Public Outreach



- **Funding Leverage**

- Work-In-Kind
- Reduction in Project Cost through shared resources and programs

- **Efficiency in Project Implementation**

- Earlier Implementation time under existing CVIFMS authority
- Synchronizes on-going USACE Projects with CVFPP
- Provide support of CVFPP policies, measures and alternatives that are in the federal interest.
- Investigates, and potentially designs and constructs new USACE projects.

Requested CVFPB Actions
Adopt Resolution No. 11-28 to:

1. Approves Amendment No.1 to the Agreement between the Board, DWR and the USACE for the Central Valley Integrated Flood Management Study in substantially the form attached hereto.

2. Delegates to the Board President the authority to execute the amendment in substantially the form attached hereto.

Questions

DWR: Deborah Condon, Project Manager
(916) 574-1426
dcondon@water.ca.gov

CVFPB Michael C. Wright, Project Manager
(916) 574-1050
mcwright@water.ca.gov

USACE: Tom Karvonen, Project Manager – Civil Works
(916) 557-7630
Tom.D.Karvonen@usace.army.mil

**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

5. PROJECT MANAGEMENT PLAN



CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY California Project Management Plan



**US Army Corps
of Engineers®
Sacramento District**

In partnership with:



**State of California
Department of Water Resources**

and



**The Central Valley
Flood Protection Board**

June 2011

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CONCURRENCE PAGE
Sacramento District
US Army Corps of Engineers

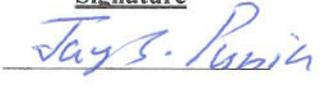
As members of the Sacramento District Project Review Board, we the undersigned concur with the project management plan dated April 2011 for the Central Valley Integrated Flood Management Study. We understand that the project management plan is a living management document that will be updated throughout the course of the study.

US Army Corps of Engineers

<u>Name</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
Kristina Mullins	Chief, Programs & Project Management	_____	_____
Alicia Kirchner	Chief, Planning Division	_____	_____
Rick Poeppelman	Chief, Engineering Division	_____	_____
Sharon Caine	Chief, Real Estate Division	_____	_____
Mike Mahoney	Chief, Construction-Operations Division	_____	_____
Susan Yarbrough	Chief, Contracting Division	_____	_____
Al Faustino	Chief, Office of Counsel	_____	_____

CONCURRENCE PAGE

Non-Federal Sponsors

<u>Name</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
Jay Punia	Executive Officer, CVFPB		9/28/11
Eric S. Koch	Acting Chief, Division of Flood Management		10/5/11
Jeremy Arrich	Chief, Central Valley Flood Planning Office		10-4-11
Michael Wright	Project Manager, CVFPB		9/23/11
Deborah Condon	Project Manager, Central Valley Flood Planning Office		9-21-2011

CHANGE MANAGEMENT

Changes to the approved Project Management Plan (PMP) will be documented in the table below. In particular, any significant changes to the scope, schedule, budget, or Project Delivery Team (PDT) for the Central Valley Integrated Flood Management Study should be recorded with appropriate updates to this PMP. The USACE and non-Federal sponsor representatives on the PDT will review and agree to changes proposed to the approved study cost or major study milestones before subsequent action by the appropriate level of approval. Proposed changes shall be coordinated through the following USACE and non-Federal sponsor Points of Contact: USACE Project Manager, Tom Karvonen; Chief, Central Valley Flood Planning Office, Jeremy Arrich; and Central Valley Flood Protection Board Project Manager, Christopher Williams.

<u>DOCUMENT</u>	<u>DATE</u>	<u>DESCRIPTION & LOCATION WITHIN PMP OF REVISION</u>	<u>DATE APPROVED</u>	<u>APPROVED BY</u>
Original PMP		NA		
Revision # ____				

**CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY
PROJECT MANAGEMENT PLAN**

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CHAPTER I—PURPOSE AND SCOPE

1.1 DEFINITION OF PROJECT MANAGEMENT PLAN

The project management plan (PMP) for the Central Valley Integrated Flood Management Study (CVIFMS) has been prepared in coordination with the Central Valley Flood Protection Plan (CVFPP), one of two programs included in the State of California FloodSAFE program's comprehensive integrated flood management strategy. The CVFPP is focused specifically on reducing flood risk for areas protected by the Facilities of the State Plan of Flood Control (SPFC), which includes Federal/State project levees and other associated flood risk management infrastructure. The CVIFMS is the Federal complement to the CVFPP and is focused on shared opportunities to reduce flood risk in an integrated water resource and flood management context. Both studies have the common goal of determining a Federal/State strategy that will lead to expedient and cost shared implementation of new and continuing projects to reduce flood risk in the Central Valley.

The CVIFMS area of study and interest includes numerous watersheds and is inclusive of the CVFPP footprint (See Figures 1 and 2, Enclosure A). As shown in Figures 3, 4, and 5 (Enclosure A), the study area also encompasses several ongoing associated flood risk management (FRM) studies and other water resource elements of the existing FRM system of the Central Valley. This PMP presents a five year scope of work for aligning development of the CVIFMS with the CVFPP 2012 report and subsequent CVFPP 2017 report update, and collaborating on a comprehensive integrated flood management strategy. Scoping for this PMP was based on a programmatic and coordinated approach and the CVIFMS tasks can easily be adapted in order to identify Federal interest in CVFPP elements as they are developed. The breadth and complexity of the scoping effort led to the development of basic guidelines and objectives that assisted the Project Delivery Team (PDT) in determining broad scopes and costs which will need to be refined and focused as the study moves forward in coordination with the five year timeline for the CVFPP 2017 Report. The CVIFMS PMP guidelines and objectives include:

- Corroborate and review CVFPP processes and products for Federal policy compliance and technical acceptability. Identify differences and work on resolution within the five year timeline.
- Coordinate and identify Studies and Projects with Federal interest that are supported by the CVFPP process and State Systemwide Investment Approach.
- Adapt to changes and collaborate with the CVFPP processes and timeline.
- Support and coordinate continued study and implementation of existing FRM and ecosystem studies and projects.
- Identify cost savings and resource efficiencies within CVIFMS, CVFPP, and associated studies through shared data, information, and consistent technical decisions.
- Serve as communication conduit within and across CVIFMS, CVFPP, and associated studies.
- Ensure consistency and continuity in documents, communication, and processes.

The necessity of building on the CVFPP momentum and study structure, as well as the systemwide nature of the study required an expansion of the roles and responsibilities for the CVIFMS, beyond those found in traditional watershed and feasibility studies. This PMP identifies and defines the following three categories of roles and responsibilities required for the comprehensive nature of the CVIFMS to accomplish the identified objectives:

- Support role and responsibilities: The US Army Corps of Engineers (USACE) is to provide technical and policy expertise, conduct reviews of CVFPP documents, and participate as team members in the CVFPP processes.
- Communication role and responsibilities encompass the support and lead roles. The CVIFMS is envisioned to serve as a primary communication and information conduit for the CVFPP to the USACE District Support Team, Regional Integration Team, and Headquarters. It will also serve as the informational nexus with CVFPP to ongoing FRM studies and programs to ensure consistency and coordination. The communication plan (Refer to Enclosure G) will be coordinated and updated to reflect CVFPP communication efforts to ensure a consistent CVIFMS/CVFPP communication strategy.

- Lead role and responsibilities focus on the development of two primary planning reports that will be the Federal complement to the CVFPP 2012 and 2017 reports and process:
 - A Programmatic Implementation Framework Document (Framework Document), due in 2012, which is also known as a “companion document” will be developed in close coordination with the State’s 2012 CVFPP Report. The document’s primary purpose will be to provide an outline and a strategy for CVIFMS in future coordination and collaboration with the CVFPP in determining Federal/State FRM interest and implementation for the CVFPP 2017 Report. The audience for this informational document is Congress and the California Legislature.
 - A Programmatic Feasibility Study (Feasibility Study), due 2017, which will be a programmatic level study and report prepared in an integrated water resource and FRM management context in coordination and cooperation with the 2017 CVFPP Report. The Feasibility Study will identify and validate areas of Federal FRM interest in alignment with the State Systemwide Investment Approach and emphasize specific implementation and recommended studies.

The lead role and responsibilities also include generation of planning/technical reports and work products in support of CVFPP and CVIFMS development. This could include reviewing existing authorities and researching the possibility of developing a system authorization that may allow more flexibility for specific/regional projects within the overall CVFPP program.

The PMP presents a “living” and adaptable process and is a supplement to the Feasibility Cost Sharing Agreement (FCSA). The PMP defines the study approach, primary documents to be produced, roles and responsibilities, general activities to be accomplished, schedule, and the associated general cost distribution that the Federal Government and the non-Federal sponsors will be supporting financially and in-kind to complete the necessary efforts for CVIFMS. The FCSA and associated PMP, therefore, define a contract between the USACE and the non-Federal sponsors, and reflect a “buy in” on the part of the financial backers, as well as those who will be performing and reviewing the work. The PMP forms the basis for identifying commitments to the non-Federal sponsors and serves as a basis for performance measurements. It is a 5 year strategy for scoping and funding CVIFMS from 2012 through 2017, which is aligned with the CVFPP legislative requirements of providing the first report in 2012 and a subsequent 5 year report update focused on implementation in 2017.

Planning is an iterative process without a predetermined outcome; therefore, more or less time and higher or lower costs may be required to accomplish tasks as alternatives are developed and the needs and processes associated with the CVFPP evolve. Changes and refinements in scope and cost distributions will occur as the planning coordination and technical work move quickly forward to completion. The programmatic approach of developing the PMP with generalized descriptions and costs will allow for adaptation as deviations occur or additional needs are identified. The CVIFMS and CVFPP teams will continue to collaborate upon approval of the PMP and refinement will happen continuously; reassessment and adjustment of scopes are expected as the CVFPP continues to develop. The impact in either time or money can be assessed and decisions can be made on how to proceed and adjust in full coordination with the CVFIMS and CVFPP PDTs and respective management.

1.2 SUMMARY OF PROJECT MANAGEMENT PLAN CONTENTS

This PMP is composed of the following chapters:

- **Chapter I—Purpose and Scope.** This chapter provides an overview of the CVIFMS and its relation to the State’s CVFMP, the definition of the PMP, and a summary of the PMP requirements.
- **Chapter II—Study Authority and Background.** Chapter 2 describes the authority and background of the study and includes a description of the study area and the non-Federal sponsors. Subsections of Chapter II are as follows:

2.1 Study Authority

- 2.2 Background and Purpose
 - 2.3 Location of Study and Non-Federal Sponsor Planning Areas
 - 2.4 Study Area Maps
 - 2.5 Relevant Reports and Projects
 - 2.6 Initial CVIFMS Planning and Coordination
 - 2.7 Plan Formulation
 - 2.8 Federal Interest
 - 2.9 Preliminary Financial Analysis
 - 2.10 Initial Assumptions and Exceptions
 - 2.11 CVIFMS Milestones
 - 2.12 CVIFMS Cost Estimate
 - 2.13 Views of Other Resource Agencies
 - 2.14 Potential Issues Affecting CVIFMS Initiation
 - 2.15 Recommendations
- **Chapter III—Work Breakdown Structure.** The Work Breakdown Structure (WBS) will define the project, subprojects, parent tasks, and tasks that will be accomplished in preparing the Framework Document and the Feasibility Study and supporting documents. The chapter includes the following subsections:
 - 3.1 Levels of the WBS
 - 3.2 Listing of Tasks-WBS
 - **Chapter IV—Scopes of Work.** Chapter IV provides a discussion of the scope of the tasks to be accomplished. The chapter provides a reference to the more detailed scopes of work that are included as Enclosure C to the PMP. Chapter IV includes the following subsections:
 - 4.1 Detailed Scopes of Work (with reference to Enclosure C)
 - 4.2 Durations of Tasks
 - 4.3 Costs of Tasks
 - **Chapter V—Responsibility Assignment.** Chapter V provides an Organizational Breakdown Structure that will define who will perform work on the study. The functional organizations that will perform each of the tasks will also be presented in a Responsibility Assignment Matrix. The chapter includes the following subsections:
 - 5.1 Organizational Breakdown Structure
 - 5.2 Responsibility Assignment Matrix
 - **Chapter VI—Study Schedule.** The schedule defines when key decision points for the CVIFMS will be accomplished, including South Pacific Division (CESPD) milestone conferences and mandatory HQUSACE milestones. Chapter VI includes the following subsections:
 - 6.1 Schedule Development
 - 6.2 Funding Constraints
 - 6.3 Non-Federal Sponsor Commitment
 - 6.4 Uncertainties in the Schedule
 - 6.5 Milestone Schedule
 - **Chapter VII—Cost Estimate.** The baseline estimate for the study is presented in Chapter VII. The chapter includes the following subsections:
 - 7.1 Basis for the Cost Estimate
 - 7.2 Costs for Federal and Non-Federal Activities
 - **Chapter VIII—Quality Management Plan.** Chapter VIII is a summation of the review requirements as described in the Review Plan (Enclosure F). Chapter VIII includes the following subsections:
 - 8.1 Quality Objective
 - 8.2 Guidelines Followed for Technical Review
 - 8.3 Roster of the Project Study Team

- 8.4 Roster of the Review Teams
- 8.5 Documents to be Reviewed and Schedule for Review Activities
- 8.6 Updates to the Approved Review Plan
- 8.7 Cost Estimate for Quality Management
- 8.8 PMP Quality Certification
- 8.9 Study Certifications

- **Chapter IX—Identification of Procedures and Criteria.** Chapter IX provides references to the regulations and other guidance that covers the planning process and reporting procedures. The following subsections are included in this chapter:
 - 9.1 Evolution of the PMP
 - 9.2 The Planning Process
 - 9.3 Policy
 - 9.4 USACE Regulations
 - 9.5 Processing Requirements
- **Chapter X—Coordination Mechanisms.** Chapter X describes the coordination between the CVIFMS and the CVFPP, the study's public involvement milestones and specific activities.
 - 10.1 Coordination Between CVIFMS and CVFPP
 - 10.2 Public Involvement Milestones
 - 10.3 Study Specific Public Involvement Activities

The following enclosures are included in this document:

- **Enclosure A—CVIFMS Project Area Maps.** This enclosure provides maps that show the general geographic location of the study, CVFPP, and other FRM studies.
- **Enclosure B—CESPD Milestone System.** A description of the CESPD feasibility phase milestones.
- **Enclosure C—Detailed Scope of Work.** Detailed descriptions of the tasks to be accomplished during this project.
- **Enclosure D—Quality Certification.** A certification stating that adequate District quality control has been applied to this PMP.
- **Enclosure E—List of Acronyms.** List of acronyms used throughout the document.
- **Enclosure F—Review Plan.** A copy of the approved review plan for this project. Similar to this PMP, the review plan is a living document that will be updated and refined as appropriate during the study process.
- **Enclosure G—Communication Plan.** This plan identifies the steps that will be taken for communication with the CVFPP, other associated FRM studies, stakeholders, and the public during the study.
- **Enclosure H—Geospatial Data Management Plan.** A copy of the signed plan coordinated with the CVFPP program for use and management of geospatial data (such as computer-aided design and drafting and geographical information system [GIS]) during the study.
- **Enclosure I—Letter of Intent.** Letters of intent from the non-Federal sponsors stating a willingness to pursue the Feasibility Study and to share in its cost are attached.
- **Enclosure J—Draft Project Schedule.** A general baseline, draft project milestone schedule is provided here. The schedule will be updated as necessary during the project.
- **Enclosure K—Related Studies, Plans, and Projects.** A listing of related projects in the Central Valley and Delta areas that provides context for the CVIFMS and the CVFPP.

CHAPTER II—STUDY AUTHORITY AND BACKGROUND

2.1 STUDY AUTHORITY

The CVIFMS is a continuation of the Sacramento and San Joaquin River Basins, California Comprehensive Study (Comp Study). Congress authorized the Comp Study in Section 209 of the Flood Control Act of 1962 (Public Law 87-874). In the 1998, House Report 105-190 of Public Law 105-62, Congress provided direction for the study:

“Sacramento River and San Joaquin River Basins Comprehensive Study, California. In response to the devastating floods of 1997, the Committee has added funds and directs the USACE to conduct a comprehensive assessment of the entire flood control system within the existing study authorizations of the Sacramento River Watershed Management Plan (authorized by the Flood Control Act of 1962) and the San Joaquin River and Tributaries authority (authorized by 1964 Resolution of the House Committee on Public Works). These comprehensive investigations will include: (1) preparation of a comprehensive post-flood assessment for the California Central Valley (Sacramento River Basin and San Joaquin River Basin), (2) development and formulation of comprehensive plans for flood control and environmental restoration purposes, and (3) development of a hydrologic/hydraulic model of the entire system including the operation of the existing reservoirs for evaluation of the current flood control system. Not later than 18 months after the date of enactment of this Act the Secretary shall transmit an interim report describing results of the post-flood assessment and the assessment of the existing flood control system and its deficiencies.”

In addition, the Water Resource Development Act of 2000 directed the Secretary of the Army to “integrate, to the maximum extent practicable, and in accordance with applicable laws, the activities of the USACE in the San Joaquin and Sacramento River Basins with the long-term goals of the CALFED Bay-Delta Program.”

2.2 BACKGROUND AND PURPOSE

Major flooding throughout the Central Valley has been well documented since the early 1800s, prompting various planning efforts by local, State, and Federal entities over the last century. These efforts have resulted in the construction of flood management features and systems throughout the Central Valley. Despite these activities, damages from flooding in February 1986 and January 1997 were the highest on record, shedding light on the susceptibility of the Central Valley and its growing communities to catastrophic flooding.

In response to concerns primarily raised by the 1997 flood, the Governor of California formed the Flood Emergency Action Team (FEAT). In its May 1997 report, the FEAT recommended developing a “new master plan for improved flood control in the Central Valley” of California. The California Legislature (September 1997) and US Congress (1998) subsequently authorized the Comp Study. The House Report 105-90 accompanying the 1998 Energy and Water Development Appropriations Act, Public Law 105-62 called for the “development and formulation of comprehensive plans for flood control and environmental restoration purposes.” From this authorization the State and the USACE developed the Comp Study, Interim Report, dated December 20, 2002.

Comp Study—A comprehensive effort to develop an effective plan for the flood management system requires evaluating how the complete system functions, how its performance could be improved, and how changes to parts of the system affect its overall performance. The need for system-wide comprehensive analysis applies to both flood damage reduction and ecosystem restoration objectives. The capability of analyzing the flood management system comprehensively would replace the past practice of making incremental changes to the system without fully understanding how it may affect other parts of the system and the performance of the system as a whole.

A major undertaking of the Comp Study was developing the necessary analytical tools to evaluate how changes to the system affected the performance of the system as a whole with respect to reducing flood damages, protecting public safety, and restoring degraded ecosystems. The size, complexity, and differences of the two river basins that are the subject this study were especially challenging in developing computer models to understand how

flood waters moved through the flood management system, how those flows damaged property and threatened public safety, and how flows are related to restoring degraded ecosystems. These computer-modeling tools have the capability to evaluate how broad changes to the system affect its overall performance and potentially redirect impacts to other parts of the system. Further refinement of these models could support future planning for regional changes to the flood management system.

During computer modeling tools development, potential measures were evaluated, both individually and in various combinations, to understand how the flood management system functions and how it responds to changes. System-wide application of the computer modeling tools often confirmed or clarified intuitive understandings of the system and provided a sense of scale or quantified the magnitude of the system's response to change. The evaluations led to several important findings about the flood management system. Some of these findings are as follows:

- The system cannot safely convey the flows that it was formerly considered capable of accommodating;
- If levee reliability were improved system-wide, substantial increases in flood storage capacity would be necessary to avoid transferring increased flood risks to downstream areas; and
- A comprehensive solution to improve public safety, reduce flood damages, and restore degraded ecosystems would require a combination of measures that increase conveyance capacity, increase flood storage, and improve floodplain management.

A process evolved from the Comp Study planning to develop future projects to meet the system's comprehensive public safety, flood damage reduction, and ecosystem restoration objectives. This process consists of guiding principles for integrating flood damage reduction and ecosystem restoration in future changes to the flood management system. The process provides an approach to develop projects that ensure system-wide effects are evaluated, regardless of project scale and an administrative structure to oversee consistent application of the process. The guiding principles are intended to apply to any proposal that may affect the flood management system and are summarized below:

- Recognize that public safety is the primary purpose of the flood management system;
- Promote effective floodplain management;
- Recognize the value of agriculture;
- Avoid hydraulic and hydrologic impacts;
- Plan system conveyance capacity that is compatible with all intended uses;
- Provide for sediment continuity;
- Use an ecosystem approach to restore and sustain the health, productivity, and diversity of the floodplain corridors;
- Optimize use of existing facilities;
- Integrate with the CALFED Bay-Delta Program and other programs;
- Promote multipurpose projects to improve flood management and ecosystem restoration; and
- Protect infrastructure.

These guiding principles for planning future projects, published in 2002, provided valuable lessons learned for the current efforts of the State's FloodSAFE/CVFMP-CVFPP and the CVIFMS process described in this PMP.

FloodSAFE/CVFMP-CVFPP—The devastation and loss of life resulting from Hurricane Katrina in 2005 further raised public awareness of catastrophic storms throughout the nation. In response, California voters passed the Disaster Preparedness and Flood Prevention Bond Act (Proposition 1E) and the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act (Proposition 84) in November 2006, providing a combined nearly \$5 billion in State funding for flood management improvements.

In 2007, the California Legislature passed five interrelated bills aimed at addressing the problems of flood protection and liability, including Senate Bill (SB) 5, SB 17, Assembly Bill (AB) 5, AB 70, and AB 156. SB 5 directed the California Department of Water Resources (DWR) to develop and the Central Valley Flood Protection

Board (CVFPB) to adopt the CVFPP. AB 162, another flood-related bill passed in 2007, required additional consideration of flood risk in local land use planning throughout California. These bills added or amended sections in the California Government Code, Health and Safety Code, Public Resources Code, and Water Code.

One of the objectives of the CVFPP is to develop a vision for future flood management in the Central Valley. Due to the interests of the CVFPB, DWR, and the USACE in existing and future Federal/State water resources projects and programs in the Central Valley, the non-Federal sponsors have requested USACE assistance in developing the CVFPP. The intent is to build off the Comp Study and other studies to develop the 2012 CVFPP Report.

CVIFMS and CVFPP: The purpose and intent of the CVIFMS is to determine Federal interest and provide the Federal support for the State CVFPP vision of improved FRM in the Central Valley. The primary CVFPP goal as stated in the January 2011 CVFPP Progress Report is to:

- **Improve Flood Risk Management**—Reduce the chance of flooding, and the damages once flooding occurs, and improve public safety, preparedness, and emergency response through the following:
 - Identifying, recommending, and implementing structural and nonstructural projects and actions that benefit lands currently receiving protection from facilities of the SPFC.
 - Formulating standards, criteria, and guidelines to facilitate implementation of structural and nonstructural actions for protecting urban areas and other lands of the Sacramento and San Joaquin river basins and the Delta.

In addition, the supporting goals for CVFPP are as follows:

- **Improve Operations and Maintenance**—Reduce systemwide maintenance and repair requirements by modifying the flood management systems in ways that are compatible with natural processes, and adjust, coordinate, and streamline regulatory and institutional standards, funding, and practices for operations and maintenance, including significant repairs.
- **Promote Ecosystem Functions**—Integrate the recovery and restoration of key physical processes, self-sustaining ecological functions, native habitats, and species into flood management system improvements.
- **Improve Institutional Support**—Develop stable institutional structures, coordination protocols, and financial frameworks that enable effective and adaptive integrated flood management (designs, operations and maintenance, permitting, preparedness, response, recovery, and land use and development planning).
- **Promote Multi-Benefit Projects**—Describe flood management projects and actions that also contribute to broader integrated water management objectives identified through other programs.

As with the CVFPP, the CVIFMS will build on the tools and recommendations that were developed during the Comp Study. The CVIFMS team, in developing the PMP and associated documents, will synchronize with the existing CVFPP efforts to stress efficiency, coordination, and communication. The CVIFMS will focus on FRM and ecosystem restoration in an integrated water resource context that will be within the Federal interest consistent with USACE guidelines and policies. It will provide parallel technical and policy support to the CVFPP study. In addition, the CVIFMS could potentially include investigations of and, potentially, recommendations for Federal actions that the USACE could pursue through design and construction, given concurrent local sponsor interest.

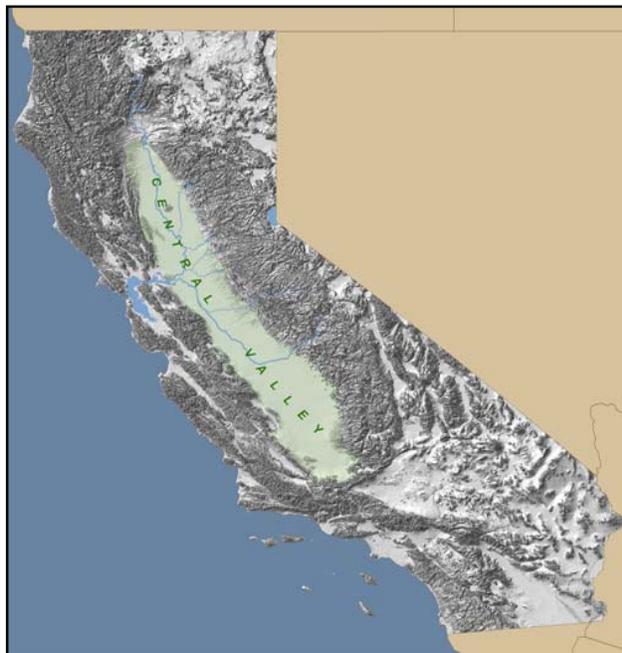
2.3 LOCATION OF STUDY AND NON-FEDERAL SPONSOR PLANNING AREAS

The study is being conducted in the Central Valley of California in the watershed boundaries of the Sacramento and San Joaquin Rivers. For planning and analysis, and consistent with legislative direction of the non-Federal sponsors, two geographical planning areas are important for the CVIFMS development and CVFPP coordination, as follows:

- **State Plan of Flood Control Planning Area**—This area is defined by the lands receiving protection from facilities of the SPFC. The State’s flood management responsibility is limited to this area.
- **System-Wide Planning Area**—This area includes the lands that are subject to flooding under the current facilities and operation of the Sacramento-San Joaquin River Flood Management System (Water Code Section 9611). The SPFC Planning Area is completely contained within the System-Wide Planning Area.

2.4 STUDY AREA MAPS

A map of the CVIFMS watershed boundaries, showing the Central Valley and the watersheds of the Upper and Lower Sacramento and San Joaquin Rivers, is provided as Figure 1 in Enclosure A—CVIFMS PROJECT AREA MAPS. The two planning areas for CVFPP discussed above are shown in Figure 2 of Enclosure A. Within the System-Wide Planning Area, which encompasses the entire SPFC Planning Area, the Feasibility Study will describe FRM facilities, will evaluate flood problems and deficiencies, and will develop and propose solutions. Evaluations and analyses will be conducted at a higher level of detail in the SPFC Planning Area than in the System-Wide Planning Area and will focus on SPFC facilities. The USACE support for the State’s CVFPP will involve flood management study activities in the SPFC and System-Wide Planning Areas. Federal interests led by the USACE may involve broader areas in the Central Valley.



The Feasibility Study will be prepared in the programmatic context of other ongoing USACE FRM studies and projects. The CVIFMS effort will overlap with many of these and will communicate the ongoing efforts that are relevant to the evolving goals of the study and CVFPP efforts. The locations of ongoing USACE civil studies and projects in and adjacent to the general Central Valley study area are provided in Enclosure A: general investigations are shown in Figure 3, general construction projects are provided in Figure 4, and projects under the Continuing Authorities Program are presented in Figure 5.

2.5 RELEVANT REPORTS AND PROJECTS

A number of relevant reports and projects have been conducted by Federal and State agencies. A few representative example past and ongoing efforts are discussed to provide context for the CVIFMS process and to ensure consistency and coordination with other processes, as well as to support communication and efficiency of efforts. Refer to Enclosure K and Figures 3-5 for lists of additional efforts within the Central Valley. The following regional-scale reports and projects are important to the CVIFMS process:

USACE Regional-Scale Reports

- *Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Mid-Valley Area, Phase III, California*, January 1991. This study was the third phase of the comprehensive analysis and evaluation of approximately 240 miles of project levees along the Sacramento and Feather Rivers and their tributaries. This study indicated that sections of the project levees are susceptible to seepage and stability problems and recommended reconstruction of some of the levees.
- *Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Lower Sacramento Area, Phase IV*, October 1993. This study identified areas in the Sacramento River system where levees do not have adequate freeboard above the design water surface. The report indicated that this deficiency might

have been caused by regional subsidence due to excessive groundwater pumping, underground gas extraction, or seismic fault movement. The study recommended that the State and local agencies raise levees to the 1956 design criteria of reliably passing a 1 in 10 chance flow event. The DWR completed the levee maintenance in October 1995.

- *Sacramento River Flood Control System Evaluation, Design Memorandum Report – Mid-Valley Area, Phase III, California*, September 1995. This is the design memorandum that resulted from the system evaluations.
- *Sacramento and San Joaquin River Basins Comprehensive Study (Comp Study)*, December 2002 (<http://www.compstudy.net/index.html>). This study was a joint effort by the State of California Reclamation Board and the USACE, in coordination with Federal, State and local agencies, groups, organizations, and people of the Central Valley. Numerous technical analyses were conducted during the study to inventory resource conditions in the study area and to analyze problems and opportunities for flood management and ecosystem restoration. These studies were performed using an unprecedented suite of technical modeling tools developed by the USACE Sacramento District and DWR to simulate the hydrology, hydraulics, ecosystem function, flood risk, and associated economic damages in the Sacramento and San Joaquin River systems. Extensive data were collected to support these models and studies, including topography, historic stream flows, sedimentation and geomorphologic data, geotechnical data, land use, and economic data. The goal was to develop models that can be used by the USACE, DWR, and others in developing future flood management and environmental improvement projects in the Sacramento and San Joaquin River basins. Opportunities for future projects and discussion of other aspects of the comprehensive plan can be found in the *Interim Report, Sacramento and San Joaquin River Basins Comprehensive Study, California, 2002*.

State of California, Department of Water Resources Regional-Scale Reports

- *Urban Levees Geotechnical Evaluation Program and Technical Review Memoranda, Phase 1, 2008-2009*. The memoranda document the results of the Phase 1 urban levees geotechnical investigation and evaluation. These also provide the basis for scoping the next phase of the geotechnical investigation that will include additional field work and borings.
- *Non Urban Levees Geotechnical Evaluation Program Investigation and Preliminary Evaluation*. This document includes the results of a geotechnical investigation and preliminary evaluation of non urban levees.
- *Central Valley Flood Protection Plan (CVFPP)*, ongoing (<http://www.water.ca.gov/cvfpp/>). As part of FloodSAFE California and a legislative mandate, DWR is implementing, as of the date of this PMP, an extensive planning process to prepare a flood protection plan to provide 200-year flood protection to urban areas protected by the SPFC. The CVIFMS is being prepared as a companion program to the CVFPP.
- The *Central Valley Floodplain Evaluation and Delineation Project*, ongoing. Under this project DWR has captured LiDAR data that includes the study area. The data are being processed, as of the date of this PMP, and the results will be available for use in this Feasibility Study. In addition, DWR and USACE are updating the hydrology for the Central Valley.
- The *Early Implementation Program (EIP)* is a State program related to the FloodSAFE State Plan of Flood Control (SPFC) created to fund high priority projects to restore or improve flood protection in advance of the 2012 and 2017 CVFPP reports. Projects designed and constructed under the EIP in urban areas generally provide, or are consistent with providing, flood protection to at least the 200-year level required by the State for urban areas. While projects being completed under the EIP are not part of the SPFC and are not federally authorized at their onset, many of these projects will apply for federal authorization and credit, and will become part of the SPFC if authorized.

Regional-Scale Projects

- **Sacramento River Flood Control Project.** This project was authorized by the Flood Control Act of 1917. Construction began in 1918 on this local cooperation project, sponsored by the State of California and the Reclamation Board, and most of the components were completed in 1958. The project consists of a comprehensive system of levees, overflow weirs, outlet gates, pumping plants, levee bypass floodways (including the Yolo Bypass), overbank floodway areas, enlarged and improved channels, and dredging in the lower reach of the Sacramento River. The project controls and diverts floodwater in the Sacramento River basin and has prevented billions of dollars in damages during its history. Operation and maintenance of the project is the responsibility of DWR and the CVFPB.
- **State of California Emergency Bank Repair Program.** In 2007, DWR implemented levee setback projects in areas where bank erosion had threatened levee foundations. Three levee setback projects were implemented: two west of Interstate 5 and one on the east side of Interstate 5. In addition, multiple sites were repaired using rock revetment. Plans are in place to construct two additional levee setbacks on the north side of Cache Creek and west of Interstate 5, and two additional setbacks are being planned for 2011.

Other Relevant Studies, Plans and Projects

In addition to the reports and projects listed above, a large number of relevant recently completed and ongoing studies and projects in and adjacent to the Central Valley are related to FRM. Some of the more relevant programs and project documents, including Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs) are listed in Enclosure K—Related Studies, Plans, and Projects. The studies, plans, and projects listed in Enclosure K are either ongoing or have been completed within approximately the last dozen years. They involve technical issues that bear on the CVIFMS scope, and are either located in the Central Valley general study area or the downstream Delta area that would be affected by flooding in the Central Valley. The list provided in Enclosure K is not comprehensive, but provides the context in which the CVIFMS will be conducted.

2.6 INITIAL CVIFMS PLANNING AND COORDINATION

Initial but limited coordination and planning for CVIFMS between the USACE and the non-Federal sponsors began following the 2007 passage of the five flood protection and liability bills by the California Legislature, discussed in Section 2.2 of this PMP. A limited PMP and FCSA in 2010 was approved to fully scope, coordinate, and develop a PMP and amended FCSA in 2011 so that the USACE can fully coordinate and participate with the CVFPB as the CVIFMS process moves forward to 2017.

Initial PMP Planning

Coordination between the State CVFPB and the Federal CVIFMS programs has included attendance at State-hosted CVFPB and other FloodSAFE workshops and regularly scheduled coordination meetings. In addition, a cost sharing agreement was prepared and finalized for the PMP development phase of the program. Initial funds for the PMP were appropriated in 2009, and the initial CVIFMS PMP document preparation planning began with the formation of the PDT. The process included interviews with CESPd discipline leads and technical personnel and three two-day planning workshops. Meetings conducted in late 2010 between senior USACE and State officials resulted in the preparation of the CVIFMS Coordination Discussion Paper, October 27, 2010, as presented at the October 2010 Delta Leadership Team meeting.

Discipline Interviews

Following preparation of the CVIFMS Coordination Discussion Paper, interviews were conducted with various USACE discipline members to identify and document past and current associated technical and future support to CVFPB and other FloodSAFE program efforts. The interviews focused on a review of existing and ongoing projects in the Central Valley planning area and included discussions of future needs. The interviews took place December 7 and 8, 2010, and included a discussion of the following topics:

- Ongoing programs, projects, or studies related to flood management in the Central Valley or Delta areas;
- Coordination with CVFPP efforts and products;
- Any missing or outdated data;
- Future programs, projects, or studies that might be undertaken as part of the CVIFMS; and
- The level of technical analysis and major assumptions expected on any future programs, projects, or studies

The results of the interviews were communicated to the CVFPP team for review and comment. Following that, a joint CVFPP/CVIFMS workshop was conducted to discuss the scope and direction of the CVIFMS effort.

CVFPP/CVIFMS Planning Workshop and Conclusions

The CVFPP/CVIFMS workshop was conducted on February 4, 2011, and a progress update to the State was prepared on February 11, 2011 and presented at the Delta Leadership Team February 2011 meeting. At the workshop, it was concluded that the CVIFMS team would continue to work with CVFPP staff in defining and scoping this PMP and the associated FSCA amendment. Furthermore, the PMP would outline an adaptable and living strategy for the development of the CVIFMS and related products in close coordination with the CVFPP process primary document submittal dates. The PMP would provide a scope for two primary efforts and associated documents:

- The Framework Document, due early 2012, and
- The Feasibility Study, a programmatic document due 2017, with an associated joint programmatic NEPA/CEQA document.

It was determined that the CVIFMS will be developed in an integrated water resource management context and will complement the CVFPP system-level planning strategy, with an emphasis on developing a Federal/State implementation process. The USACE Engineering Circular 1105-2-411 Watershed Plans provides a framework for identifying roles for the CVIFMS to be developed in an integrated water resource context and, in coordination with the CVFPP process, provide support, communication, and lead roles. USACE guidance for preparing feasibility studies will be used for preparation of the Feasibility Study and supporting documents. Draft primary tasks were identified and were incorporated into the Scopes of Work as described in Chapter IV and Enclosure C.

2.7 PLAN FORMULATION

Plan formulation will consist of comprehensive analyses and coordination efforts with CVFPP that integrate programmatic approaches for FRM and ecosystem restoration across diverse political, geographic, physical, institutional, technical, and stakeholder boundaries. Alternative approaches will address the identified water resources needs in the study area and provide potential solutions that reflect Federal and State interests. Recommendations may, therefore, identify potential USACE/State projects consistent with Federal authority. In addition, projects may be identified that require separate early spin-off feasibility studies, either in partnership with the State or for implementation by the State only, other Federal agencies, or other entities. The intention of the plan formulation effort is to conduct a collaborative evaluation of a complete range of potential solutions in order to identify the most technically sound, environmentally sustainable, and economically efficient means to achieve system-wide integrated water resource goals in the study area.

The system-level planning process resulting in a programmatic feasibility study will generally follow the six planning steps that are set forth in the Water Resource Council's Principles and Guidelines. The six planning steps will be focused on existing and potential future authorities in the study area, existing systems and their operations, and potential alternative approaches that would be evaluated for Federal interest. The overall study would include several parallel efforts related to communication and support of the State's CVFPP, such as evaluation of products, communication and outreach, NEPA/CEQA compliance, and the interaction of technical experts. The six planning steps are: (1) specify problems and opportunities, (2) inventory and forecast conditions, (3) formulate alternative plans, (4) evaluate effects of alternative plans including the State Systemwide Investment Approach, (5) compare alternative plans, and (6) select recommended plan. These steps are typically conducted in an iterative manner so that previous steps are revisited during the process to make sure the ongoing plan formulation

of alternative approaches, for example, satisfy the study's initially identified problems and objectives.

The CVIFMS plan formulation will be based on information from the following sources:

- Material developed from the CVFPP planning process in the last several years that is relevant to the CVIFMS plan formulation; this information and lessons gained will be incorporated where applicable for efficiency and coordination.
- The Comp Study information, recommendations, and lessons learned will be incorporated as applicable, along with material from past and current FRM studies within the Central Valley.
- The CVIFMS interviews and information acquired during the PMP development.

National Objectives

The CVIFMS effort will be consistent with and conducted within the context of several national objectives:

- The Federal objective of water and related land resources planning is to contribute to national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. Contributions to National Economic Development (NED) are increases in the net value of the national output of goods and services, expressed in monetary units. Contributions to NED are the direct net benefits that accrue in the planning area and the rest of the nation.
- The USACE has added a second national objective for National Ecosystem Restoration (NER) in response to legislation and administration policy. This objective is to contribute to the nation's ecosystems through restoration, with contributions measured by changes in the amounts and values of habitat.
- The legislative basis for Federal participation in recreation development is found in the Flood Control Act of 1944, as amended, the Federal Water Project Recreation Act of 1965 (Public Law 89-72), and the Water Resources Development Act of 1986 (Public Law 99-662). These give broad authority to include recreation as a project purpose. Present policy limits exercise of these authorities, as defined in ER 1105-2-100, Planning Guidance.

Public Concerns

A preliminary list of potential public concerns has been prepared by PDT staff during the course of the PMP development process and through prior and current investigations within the Central Valley. These public concerns that will require additional validation and potential additions, as related to the establishment of planning objectives and planning constraints, are as follows:

- Implement the most cost-effective program that achieves an effective level of flood risk management and ecosystem restoration;
- Protect people, property, and public infrastructure;
- Reduce flood risk in the Central Valley;
- Provide flood protection, a manageable waterway, improved wildlife habitat, and minimum impacts to agricultural lands;
- Enhance and preserve shaded aquatic riparian and riparian habitat where feasible;
- Include opportunities for public access and recreation;
- Preserve cooperative partnerships;

- Preserve agricultural stewardship;
- Ensure sustainable financing for FRM measures; and
- Provide for the ability of the system to adapt to future changes, including climate change.

Problems and Opportunities

Proper identification of problems and opportunities in the Central Valley is the foundation for the plan formulation process. Problems are often the focus of past extreme events, local needs, legislation that bears on local resources, local government interests, and the affected public. It is therefore critical that the study effort identify problems and opportunities that reflect the priorities and preferences of the Federal government, the non-Federal sponsors, and other groups participating in the study process. Work products associated with the CVFMP and other State water resource programs will provide the basis for identifying problems and opportunities that can be addressed through water and related land resource management. The problems identified in the past that will be validated for inclusion in the system-wide study are the following:

- Public safety, including the potential for loss of life and the far-reaching economic impacts of flooding associated with the residential and business structures that are located within the historic as well as modified floodplain;
- Struggles to maintain aging facilities;
- Institutional barriers, land ownership, and access restrictions in levee areas can provide constraints to levee inspections and operation, maintenance, repair, rehabilitation and replacement;
- Flooding that occurs on agricultural lands and agricultural infrastructure; and
- Limited on Federal authorities to provide for flexibility in implementing system-wide/regional projects.

The prior investigations have identified the following potential opportunities to address identified problems:

- Reduce flood risks through flow manipulation, operational changes, and structural/nonstructural features;
- Use of nonstructural methods and the incorporation of strategies to address residual risks;
- Preserve or enhance the environment in the Central Valley through improved ecosystem functionality;
- Address bank erosion in project limits;
- Investigate a broad range of management and structural/non-structural options;
- Develop a comprehensive plan inclusive of all stakeholders;
- Develop streamlined 404 permitting in coordination with the resource agencies; and
- Explore a system-wide authority to provide for flexibility in Federal implementation of specific/regional projects.

Planning Objectives

The objectives of NED and NER are general statements and are not specific enough for direct use in plan formulation. Rather, the water and related land resource problems and opportunities identified in this study are specific planning objectives that provide focus for subsequent formulation of alternatives. By definition, these planning objectives reflect the problems and opportunities identified thus far and represent desired positive changes to the future without-project conditions. The objectives also reflect a broad systems approach to the problems and solutions in the Central Valley, as follows:

- Improve public safety;
- Reduce the risk of flooding to residential, agricultural, and commercial/industrial areas, and roads and other public infrastructure, by analyzing water resources issues on a large system scale;
- Reduce flood risks and establish ecosystem processes by using a systems approach to address the connection between natural and man-made systems and their operations;
- Improve multiple environmental functions using water and related resources in a balanced manner; and
- Collaborate with a broad range of stakeholders to help solve water resources problems in an integrated and sustainable manner.

Planning Constraints

Unlike planning objectives that represent desired positive changes, planning constraints represent restrictions that should not be violated. The potential planning constraints for this study are as follows:

- Study alternatives will be in acknowledgement and compatible with local land use and development plans, and laws, regulations, and policies such as NEPA and CEQA, the Endangered Species Act, the Clean Water Act, the National Historic Preservation Act, and USACE planning guidance;
- The study recommendations will be consistent with the spirit and intent of Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands;
- Plans will be compatible with provisions of the National Flood Insurance Program;
- A responsible and capable non-Federal sponsor must agree to sharing project costs and assuming all operation and maintenance costs; and
- The selected plan will not adversely affect downstream developments without compensating for the effects of those being considered.

Potential Measures to Address Identified Planning Objectives

A management measure is either a feature or activity that can be implemented and addresses one or more of the planning objectives, while avoiding the planning constraints. A feature is a structural measure that generally requires construction such as a levee, wider channel, or restored tidal wetland. An activity is typically a nonstructural measure linked with management changes in operations or institutional policies such as a Best Management Practice or reservoir regulation. Measures are typically building blocks of alternative approaches, but can be stand-alone approaches as well. They have identifiable outputs, costs, and locations. For this programmatic feasibility study, the system-wide alternative approaches and their expected outcomes may include alternative courses of actions, basin-wide management strategies, or alternative methods to address the identified needs through programs of other Federal or local entities.

A wide variety of measures were previously considered through the Comp Study as well as in the ongoing CVFMP planning process. Moving forward, appropriate measures will be assessed, and a determination will be

made regarding which measures should be retained in the formulation of alternative plans. Future measures and alternative approaches will encompass those identified in CVFPP efforts, including the State Systemwide Investment Approach. In addition, measures that serve Federal interests but are not in the CVFPP may be included. Measures and alternative approaches will be evaluated and compared. The beneficial and adverse effects, including monetary and non-monetary benefits and costs, will be identified across a broad array of criteria. The criteria to be used may include the four P&G criteria (completeness, effectiveness, efficiency, acceptability), national economic development, environmental quality, regional economic development, and other social effects (including public safety). Measures to be evaluated in a programmatic system context are expected to include, but not be limited to, the following:

- **No Action.** The USACE is required to consider the option of No Action as one of the alternatives in order to comply with the requirements of NEPA. No action assumes that no project would be implemented by the Federal government or by local interests to achieve the planning objectives. No action, which is synonymous with the Without-Project Condition, forms the basis from which all other alternative plans are measured.
- **Non-Structural.** Non-structural measures that will be considered as part of the CVIFMS may include the following:
 - Floodplain Regulations—Most Central Valley communities are participating in the National Flood Insurance Program. Flood Insurance Rate Maps regulate development within the 100-year Federal Emergency Management Agency (FEMA) floodplain. FEMA is updating some 100-year floodplain maps. New maps for some communities may be released during the CVIFMS period of performance.
 - Enhanced Flood Management Operations—Enhancing efficient operations and maintaining the flood management system could be accomplished by implementing changes to financing, inspections, repairs, regulatory approvals, and mitigation.
 - Improved Flood Warning and Preparedness—Improving flood warning and preparedness could be accomplished by implementing advanced forecasting and flood warning systems and by enhancing emergency preparedness planning.
 - Improved Emergency Response—Improving emergency response would involve enhanced systems for flood fighting, emergency response, and flood recovery efforts after flooding.
 - Other Measures—Floodproofing, relocations, easements, education, and other floodplain management strategies.
- **Structural.** Structural measures that will be considered as part of the CVIFMS may include the following:
 - Enhancements to Upstream Storage—Such measures could reduce peak flows in the Central Valley. Upstream storage could be enhanced by promoting efficient use of flood storage and flood releases from reservoirs, raising dam heights and thus increasing existing storage capacity, or constructing new flood management storage facilities.
 - Bypass Structures—These measures could provide flood protection by diverting flood flows into new channels around areas with high flood potential or by improving floodplain storage or overflow areas.
 - Channelization and Levee Improvements—These measures could involve lowering channel inverts, widening channel sections, levee setbacks, or improving levees to contain the design peak flow.
 - Floodways—These measures could include constructing new levees or enhancing existing levees to improve conveyance of flows and maintain in-channel flows in selected areas.

- Levee Construction—These measures could involve the construction of new levees or modifications to the existing levees. Levee design, construction, and use of portions of the levee systems would vary by location. Any levees construction would comply with USACE standards.
- **Integration of Ecosystem Restoration.** Integrating ecosystem restoration measures with flood risk management measures is required for true multi-purpose formulation. Habitat and other environmental features can be integrated with designs for flood management facilities, including floodways, bypasses, and waterside berms. Integration of ecosystem restoration measures may include:
 - Reconnecting flood plains;
 - Using setback or adjacent levees;
 - Stabilizing existing high value riparian and shaded riparian areas;
 - Incorporating woody debris; and
 - Scheduling water releases to support ecosystem objectives.

Establishment of a Plan Formulation Rationale

The overall context of the plan formulation effort will be to coordinate with the CVFPP process and share information. The goal will be to develop regional strategies and broad-based alternatives that are necessary to address significant, identifiable system-wide issues focused on FRM and ecosystem restoration. These alternatives and their implementation strategies may recommend separate specific projects or potential areas of interest for Federal /State participation.

2.8 FEDERAL INTEREST

Based on past investment and existing Federal/State FRM and ecosystem restoration projects and studies currently moving forward, there is potential future federal interest that would be consistent with USACE policies.

2.9 PRELIMINARY FINANCIAL ANALYSIS

As the non-Federal sponsors, DWR and the CVFPP will be required to share in providing 50 percent of the cost of the CVIFMS documents and process, support to CVFPP, and coordination and communication. The non-Federal sponsors are also aware of the cost-sharing requirements for potential project implementation. Letters of intent from the non-Federal sponsors stating a willingness to pursue the CVIFMS and to share in its cost are included as Enclosure I.

2.10 INITIAL ASSUMPTIONS AND EXCEPTIONS

CVIFMS Assumptions. The initial scoping and tasks for this version of the PMP are general in nature and will require additional input and specific scoping as the CVFPP progresses. The assumptions used in assessing without-project conditions will need to be carefully coordinated with the CVFPP to ensure consistency with all other relevant studies.

Policy Exceptions and Streamlining Initiatives. The study will be conducted in an integrated water resource context in accordance with the Principles and Guidelines and USACE regulations. Exceptions to established guidance may be identified that will streamline the study process but will not adversely impact the quality of the study.

2.11 CVIFMS MILESTONES

This PMP addresses the preparation of both the Framework Document and the Feasibility Study. The Framework Document is not a decision document and as such will not involve the major milestones normally used in the feasibility study preparation and approval process. Framework Document meetings will focus on policy and in-progress review sessions to keep the vertical team informed on the CVIFMS and CVFPP

progress and direction. Potential spin-off studies will develop separate PMPs as required. Major milestones for the CVIFMS are provided in Table 1.

2.12 CVIFMS COST ESTIMATE

Preliminary cost estimates for the CVIFMS Framework Document and Feasibility Study are provided in Table 2 that represent “best information available” and potential task placeholders until more specific information and CVFPP progress has been made. The amounts shown in Table 2 include the Federal costs associated with the support, communication, and lead roles that will be involved in completing the Framework Document and the Feasibility Study. Within each WBS cost estimate, the cost breakdown for support, communication, and lead roles will vary by discipline. The cost estimate is based on a summation of lump sum costs to cover/address potential tasks needed and the identified representative individual tasks as stated in the general scopes of work that are included in Enclosure C—Detailed Scope of Work.

2.13 VIEWS OF OTHER RESOURCE AGENCIES

Funding and time constraints have limited the coordination with other agencies during the PMP phase, but further coordination is scheduled. Continued coordination with the non-Federal sponsors has been ongoing through regularly scheduled meetings and workshops organized by the USACE. In addition, the non-Federal sponsors have conducted a number of workshops and other coordination meetings that have involved other resource agencies that have an interest in flood management. These interactions have helped shaped the scope included in this PMP. Continued coordination and communication with the CVFPP preparation team and other resource agencies will be an important next step in the process.

Table 1. Major Milestones and Approximate Timeframe for the CVIFMS

SPD Milestone	Description	Duration (months)	Cumulative (months)
-	Draft Framework Document	6	6
Milestone F1	Initiate Feasibility Study	0	6
-	Final Framework Document	6	12
Milestone F2	Public Workshop/Scoping	6	18
Milestone F3	Feasibility Scoping Meeting	10	28
Milestone F4	Alternative Review Conference	11	39
Milestone F4A	Alternative Formulation Briefing	5	44
Milestone F5	Draft CVIFMS Feasibility Study Report with Interim Recommendations	8	52
Milestone F6	Final Public Meeting	5	57
Milestone F7	CVIFMS Feasibility Study Review Conference	5	62
Milestone F8	Final Report to CESP	4	66
Milestone F9	Public Notice	4	70
-	Chief's Report	3	73
-	Project Authorization	5	78

2.14 POTENTIAL ISSUES AFFECTING CVIFMS INITIATION

Continuation of this study into the cost-shared phase is contingent on an executed FCSA amendment. Failure to achieve this FCSA amendment will result in termination of the study and full support to the State's CVFPP efforts. Issues that could impact the initiation of the CVIFMS could include State and Federal budgetary or funding issues or lack of timely concurrence on direction or tasks.

Lack of support and funding for CVIFMS will impact the State's ability to fully implement the State Systemwide Investment Approach identified in the 2012 CVFPP Report and 2017 update, since federal participation is required to evaluate existing federal/state projects and to determine Federal interest to any proposed changes or new projects.. The Central Valley has one of the Nation's largest system of Federal levees (approximately 1,600 miles), which is currently the weakest levee system in the Nation due to potential levee failure from through-seepage, under-seepage, and overtopping. The risk of unexpected levee failure coupled with the consequence of deep flooding presents a threat to public safety, property, and critical infrastructure.

The schedule for signing the FCSA Amendment is late FY 2011. Funds are in place for preparation of the Draft Framework Document and funds are anticipated in 2012 to finalize the document concurrent with the 2012 CVFPP Report. Based on the schedule of milestones in Section 2.11, completion of the Feasibility Study is expected to be late 2017, with a potential Congressional Authorization in the next WRDA.

2.15 RECOMMENDATIONS

I recommend that the Central Valley Integrated Flood Management Study proceed into the next phase of investigation.

Date _____

William J. Leady, P.E.
Colonel, U.S. Army
District Engineer

Table 2. Preliminary CVIFMS Cost Estimates (Federal Only)*

WBS#	Description	Cost
Framework Document		
JJ000	Framework—Plan Formulation and Evaluation	300,000
JLD00	Framework—Technical Review Documents, including Office of Counsel Review	100,000
Feasibility Study		
JAA00	CVIFMS—Surveys, GIS, and Mapping except Real Estate	1,000,000
JAB00	CVIFMS—Hydrology and Hydraulics Studies	2,200,000
JAC00	CVIFMS—Geotechnical Studies	1,600,000
JAE00	CVIFMS—Engineering and Design Analysis	1,500,000
JB000	CVIFMS—Economic Studies	1,100,000
JC000	CVIFMS—Real Estate Studies	1,100,000
JD000	CVIFMS—Environmental Studies (Except USFWS)	1,500,000
JE000	CVIFMS—Fish and Wildlife Coordination Act Report	500,000
JF000	CVIFMS—HTRW Studies	600,000
JG000	CVIFMS—Cultural Resources Studies	600,000
XXX	CVIFMS—Tribal Government to Government Consultation	50,000
XXX	CVIFMS—Regulatory	200,000
JH000	CVIFMS—Cost Estimating	500,000
JI000	CVIFMS—Public Involvement Coordination and Outreach	1,100,000
JJ000	CVIFMS—Plan Formulation and Evaluation	1,950,000
JL000	CVIFMS—Final Report Documentation	600,000
JLD00	CVIFMS—Technical Review Documents, including Office of Counsel Review	1,500,000
JM000	Feas—Wash. Level Review and Approval	20,000
JPA00	Project Management and Budget	2,000,000
JPB00	Supervision and Administration	500,000
JPC00	Contingencies	1,000,000
Subtotal Federal Costs for CVIFMS, Subject to Cost Share		\$21,520,000
CVIFMS—Independent External Peer Review (fully Federally-funded)		400,000
Estimated Total Federal Costs for CVIFMS		\$21,920,000

* The cost estimate is based on a summation of costs to cover/address potential tasks the general scopes of work that are included in Enclosure C—Detailed Scope of Work. More specific and coordinated tasks will be determined as part respective scopes.

CHAPTER III—WORK BREAKDOWN STRUCTURE

3.1 LEVELS OF THE WBS

The WBS is divided into the following five levels. Lower levels of detail will be developed as the Feasibility Study progresses and technical tasks become more refined.

- Level 1. The project
- Level 2. The subprojects are established by the phase that is appropriated by Congress, in this case, the feasibility phase of the study. This level includes the major products generated in the feasibility phase: the Feasibility Study, the PMP, and the Preconstruction Engineering and Design (PED) Agreement, which are identified in the first character of the WBS code.
- Level 3. The parent tasks are generally identified as separate products that go into the final feasibility phase documentation. Examples of these subprojects are such items as the real estate report and the hydraulics and hydrology report. These parent tasks are normally identified with the responsibility of a particular functional organization. This level is generally identified in the second and third characters of the work breakdown structure code.
- Level 4. The tasks are major separable elements of the subprojects that are keyed to separately identifiable products that are developed for the major Feasibility Study milestones. These tasks are elements of work resulting in a deliverable product, which have a beginning and an end, may be accomplished within one functional organization, can be described at a work order of detail, and are the lowest level that will be specifically tracked for cost and schedule. The cost estimates for the draft CVIFMS Feasibility Study Report are an example of a task. Tasks can be described as the summation of activities that would be accomplished by a particular functional organizational between two of the milestone events. The milestones are defined in Enclosure B.
- Level 5. The activities are separate elements of work that are managed by the functional managers to whom the tasks are assigned and that may not necessarily result in a deliverable work product to another organization. These activities are not tracked separately in terms of cost and schedule but are described in the scopes of work to the extent required to provide a clear understanding of the work required.

3.2 LISTING OF TASKS—WBS

In accordance with the levels above, the WBS in Table 3 indicates subprojects and parent tasks. The WBS elements for subordinate tasks will be developed as the study progresses. Work within the parent tasks will include lead, support, and communication roles for preparing the Framework Document, Feasibility Study, and the EIS/EIR, as indicated in Enclosure C—Detailed Scope of Work.

Table 3. Work Breakdown Structure List of Tasks

WBS#	Description
Framework Document	
JJ000	Framework—Plan Formulation and Evaluation
JLD00	Framework—Technical Review Documents, including Office of Counsel Review
Feasibility Study	
J0000	Feas—Feasibility Study Report
J0000	Milestones
JA000	Engineering Appendix
JAA00	Feas—Surveys and Mapping except Real Estate
JAB00	Feas—Hydrology and Hydraulics Studies
JAC00	Feas—Geotechnical Studies
JA000	Feas—Engineering and Design Analysis
JB000	Feas—Economic Studies
JC000	Feas—Real Estate Analysis
JD000	Feas—Environmental Studies (except USFWS)
JE000	Feas—Fish and Wildlife Coordination Act Report
JF000	Feas—HTRW Studies
JG000	Feas—Cultural Resources Studies
XXX	Feas—Tribal Government to Government Consultation
XXX	Feas—Regulatory
JH000	Feas—Cost Estimating
JI000	Feas—Public Involvement Coordination and Outreach
JJ000	Feas—Plan Formulation and Evaluation
JL000	Feas—Final Report Documentation
JLD00	Feas—Technical Review Documents, including Office of Counsel Review
JM000	Feas—Washington Level Review and Approval
JP000	Feas—Management Documents
JPA00	Project Management and Budget
JPB00	Supervision and Administration
JPC00	Contingencies
L0000	PMP
LA000	PMP – Final PMP
Q0000	PED Cost-Sharing Agreement

CHAPTER IV—SCOPES OF WORK

4.1 DETAILED SCOPES OF WORK

For each task that is included in the WBS, a scope of work is developed in narrative form which best describes the work to be conducted, including specific activities. Work on this project will be closely coordinated with the CVFPP team and will include lead, support, and communication roles for preparing the Framework Document, the Feasibility Study, and the EIS/EIR. The scopes of work have been developed by the study team, which includes representatives of the CVFPP non-Federal sponsors. The detailed scopes of work for the CVIFMS are organized by parent task in Enclosure C—Detailed Scope of Work.

4.2 DURATIONS OF TASKS

The durations for the tasks are entered into the project's network analysis system to develop the schedule that is included in Chapter VI. The durations are based on best projects of the tasks to be accomplished in coordination with the scope and duration of the CVFPP efforts. Final durations of tasks will include negotiations between the project manager and the chiefs of the responsible organizations, as identified in Chapter V, Responsibility Assignment.

4.3 COSTS OF TASKS

The scopes of work for the tasks are grouped by the parent tasks that they support. The total estimates for the parent tasks are then combined in the Preliminary Cost Estimate. The general cost estimates have been communicated between the PDT, project manager, and the chiefs of the responsible organizations with an understanding that scopes and costs will be better defined and refined as more information becomes available in future PMP revisions as both CVIFMS and CVFPP teams become fully funded and engaged.

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CHAPTER V—RESPONSIBILITY ASSIGNMENT

5.1 ORGANIZATIONAL BREAKDOWN STRUCTURE

The scopes of work represent agreements between the project manager and first line supervisors of functional organizations. The functions of these organizations in support of the project are defined by the work that is assigned. All organizations responsible for tasks, including the non-Federal sponsors and other agencies, are included with their organization codes in the Organizational Breakdown Structure shown in Table 4.

Table 4. Organizations Responsible for CVIFMS Tasks

Sacramento District	Organization Code
Programs and Project Management Division—Civil Works Branch	CESPK-PM-C
Programs and Project Management Division—Programs Branch	CESPK-PM-P
Planning Division—Water Resources Branch	CESPK-PD-W
Planning Division—Environmental Resources Branch	CESPK-PD-R
Engineering Division—Design Branch	CESPK-ED-D
Engineering Division—Engineering Support Branch	CESPK-ED-S
Engineering Division—Environmental Engineering Branch	CESPK-ED-E
Engineering Division—Geotechnical Engineering Branch	CESPK-ED-G
Engineering Division—Hydrology and Hydraulics Branch	CESPK-ED-H
Regulatory Division	CESPK-RD
Real Estate Division	CESPK-RE
Contracting Division—Service and Supply Branch	CESPK-CT
Construction-Operations Division—Operations and Readiness Branch	CESPK-CO-OR
Public Affairs Office	CESPK-PAO
Office of Counsel	CESPK-OC
Non-Federal Sponsors	Organization Code
Central Valley Flood Protection Board	CVFPB
California Department of Water Resources	DWR
Other Agencies	Organization Code
California Department of Fish and Game	CA DFG
National Oceanic and Atmospheric Administration—National Marine Fisheries Service	NOAA—NMFS
US Bureau of Reclamation	USBOR
US Environmental Protection Agency	USEPA
US Fish and Wildlife Service	USFWS
US Geological Society	USGS

5.2 RESPONSIBILITY ASSIGNMENT MATRIX

The scopes for each task are grouped by the parent task that they support, and the primary responsible organization for each parent task is identified by the organization codes in the Responsibility Assignment Matrix shown in Table 5. Budgets for the WBS elements shown in Table 5 are provided in Table 7.

Table 5. Responsibility Assignment Matrix for CVIFMS Tasks

WBS#	Description	District Org	Non-Federal	Other
Framework Document				
JJ000	Framework—Plan Formulation and Evaluation	CESPK-PD-W	CVFPB, DWR	-
JLD00	Framework—Technical Review Documents, including Office of Counsel Review	CESPK-PD-W	CVFPB, DWR	-
Feasibility Study				
JAA00	Feas—Surveys and Mapping except Real Estate	CESPK-ED-SI	CVFPB, DWR	-
JAB00	Feas—Hydrology and Hydraulics Studies	CESPK-ED-H	CVFPB, DWR	-
JAC00	Feas—Geotechnical Studies	CESPK-ED-G	CVFPB, DWR	-
JAE00	Feas—Engineering and Design Analysis	CESPK-ED-D	CVFPB, DWR	-
JB000	Feas—Economic Studies	CESPK-PD-W	CVFPB, DWR	-
JC000	Feas—Real Estate Analysis	CESPK-RE	CVFPB, DWR	-
JD000	Feas—Environmental Studies (Except USFWS)	CESPK-PD-R	CVFPB, DWR	-
JE000	Feas—Fish and Wildlife Coordination Act Report	-	-	USFWS
JF000	Feas—HTRW Studies	CESPK-ED-E	CVFPB, DWR	-
JG000	Feas—Cultural Resources Studies	CESPK-PD-R	CVFPB, DWR	-
XXX	Feas—Tribal Government to Government Consultation	CESPK-RD	-	
XXX	Feas—Regulatory	CESPK-RD	CVFPB, DWR	
JH000	Feas—Cost Estimating	CESPK-ED-S	CVFPB, DWR	-
JI000	Feas—Public Involvement Coordination & Outreach	CESPK-PAO	CVFPB, DWR	-
JJ000	Feas—Plan Formulation and Evaluation	CESPK-PD-W	CVFPB, DWR	-
JL000	Feas—Final Report Documentation	CESPK-PD-W	CVFPB, DWR	
JLD00	Feas—Technical Review Documents, including Office of Counsel Review	CESPK-PD-W	CVFPB, DWR	-
JM000	Feas—Washington Level Review and Approval	CESPK-PD-W	-	-
JPA00	Project Management and Budget	CESPK-PM-C	CVFPB, DWR	-
JPB00	Supervision and Administration	All	-	-
JPC00	Contingencies	Not assigned	-	-
L0000	PMP	CESPK-PM-C	CVFPB, DWR	-
Q0000	PED Cost Sharing Agreement	CESPK-PM-C	CVFPB, DWR	-

CHAPTER VI—STUDY SCHEDULE

6.1 SCHEDULE DEVELOPMENT

All schedules are developed using a Network Analysis System, based on the tasks that are listed in Chapter III, Work Breakdown Structure, and the durations that are included in the detailed scopes of work in Chapter IV, Scope of Studies. Major milestones that are defined in Enclosure B, CESP Milestone System, are also included in the schedules. The CVIFMS and CVFPP schedules will be closely coordinated. The draft program schedule is provided in Enclosure J. As lower level WBS tasks become better defined, the schedule will be expanded to show lower level activities by WBS and the support, communication, and lead roles of USACE activities.

6.2 FUNDING CONSTRAINTS

Funding for the first fiscal year of a feasibility or watershed study is normally limited because of the uncertainty in initiating the study phase. This constraint has been reflected in the development of the study schedule. The Framework Document will be prepared to provide additional assurances that the schedule for completion by 2017 will be maintained. Following the first year, an optimum schedule based on unconstrained funding has been assumed for subsequent fiscal years.

6.3 NON-FEDERAL SPONSOR COMMITMENT

Milestones become commitments when the project manager meets with the non-Federal sponsors at the beginning of each fiscal year and identifies two to five tasks that are important for the district to complete during the fiscal year. These commitments would be flagged in the Project Management Information System database and monitored and reported on accordingly.

6.4 UNCERTAINTIES IN THE SCHEDULE

Because of the limited evaluations in the PMP phase and the unique features of the CVIFMS program, the schedule includes allowances for uncertainty for the following reasons:

- Availability of funding;
- Technical issues found during analysis;
- Availability of staff;
- Complexity of the CVIFMS;
- Need for alignment with CVFPP;
- Possible variability of the CVFPP schedule; and
- Real estate rights of entry.

6.5 MILESTONE SCHEDULE

The schedule for the milestones for the Feasibility Study by calendar year and month, in the CESP Milestone system, is shown in Table 6. The milestones apply only to the decision document, which is the Feasibility Study, and not to the Framework Document.

Table 6. Schedule for the CVIFMS Milestones in the CESPDP Milestone System

SPD Milestone	Description	Baseline Schedule	Current Schedule
-	Draft Framework Document	January 2012	
-	Final Framework Document	June 2012	
Milestone F1	Initiate Study	January 2012	
Milestone F2	Public Workshop/Scoping	November 2012	
Milestone F3	Feasibility Scoping Meeting	November 2013	
Milestone F4	Alternative Review Conference	September 2014	
Milestone F4A	Alternative Formulation Briefing	March 2015	
Milestone F5	Draft Feasibility Study	November 2015	
Milestone F6	Final Public Meeting	March 2016	
Milestone F7	Feasibility Review Conference	August 2016	
Milestone F8	Final Report to CESPDP	December 2016	
Milestone F9	Division Engineer's Public Notice	May 2017	
-	Chief's Report	July 2017	
-	Potential Project Authorization	October 2017	

CHAPTER VII—COST ESTIMATE

7.1 BASIS FOR THE COST ESTIMATE

The feasibility cost estimate is based on a summation of costs to cover/address identified individual tasks in the general scopes of work that are included in Enclosure C—Detailed Scope of Work. These individual costs are intended to be adaptable to changes in scope and direction of the CVIFMS and CVFPP study needs and processes. Contingencies are included to deal with the uncertainty and to adapt to the needs associated with the various elements of the study within the 5 year timeline.

7.2 COSTS FOR FEDERAL AND NON-FEDERAL ACTIVITIES

The non-Federal sponsors must contribute 50 percent of the cost of the study during the period of the study, per Section 225 of the Water Resources Development Act of 2000. Up to 100 percent of the non-Federal share may be made by providing services, materials, supplies, or other in-kind services necessary to coordinate and prepare the Framework Document and Feasibility Report. The feasibility cost estimate shown in Table 7 shows in-kind work or credit for work that is to be accomplished by the non-Federal sponsors.

Table 7. Preliminary Cost Estimate for Federal and Non-Federal Activities*

WBS#	Description	Federal Cost	Non-Fed Cost / In-Kind	Total Cost
Framework Document				
JJ000	Framework—Plan Formulation and Evaluation	300,000	100,000	400,000
JLD00	Framework—Technical Review Documents, including Office of Counsel Review	100,000	20,000	120,000
Subtotal Framework Document Costs		400,000	120,000	520,000
Feasibility Study				
JAA00	Feas—Surveys and Mapping except Real Estate	1,000,000	4,000,000	5,000,000
JAB00	Feas—Hydrology and Hydraulics Studies	2,200,000	5,200,000	7,400,000
JAC00	Feas—Geotechnical Studies	1,600,000	2,600,000	4,200,000
JAE00	Feas—Engineering and Design Analysis	1,500,000	1,500,000	3,000,000
JB000	Feas—Economic Studies	1,100,000	500,000	1,600,000
JC000	Feas—Real Estate Studies	1,100,000	100,000	1,200,000
JD000	Feas—Environmental Studies (Except USFWS)	1,500,000	2,000,000	3,500,000
JE000	Feas—Fish and Wildlife Coordination Act Report	500,000	0	500,000
JF000	Feas—HTRW Studies	600,000	0	600,000
JG000	Feas—Cultural Resources Studies	600,000	100,000	700,000
XXX	Feas—Tribal Government to Government Consultation	50,000	0	50,000
XXX	Feas—Regulatory	200,000	100,000	300,000
JH000	Feas—Cost Estimating	500,000	100,000	600,000
JI000	Feas—Public Involvement Coordination and Outreach	1,100,000	1,500,000	2,600,000
JJ000	Feas—Plan Formulation and Evaluation	1,950,000	1,000,000	2,950,000
JL000	Feas—Final Report Documentation	600,000	100,000	700,000
JLD00	Feas—Technical Review Documents, including Office of Counsel Review	1,500,000	100,000	1,600,000
JM000	Feas—Washington Level Review and Approval	20,000	0	20,000
JPA00	Project Management and Budget	2,000,000	1,000,000	3,000,000
JPB00	Supervision and Administration	500,000	500,000	1,000,000
JPC00	Contingencies	1,000,000	1,000,000	2,000,000
Subtotal Feasibility Study Costs		21,120,000	21,400,000	42,520,000
Subtotal Framework Document and Feasibility Study		21,520,000	21,520,000	43,040,000
Feas—Independent External Peer Review (fully Federally-funded)		400,000	0	400,000
Estimated Total Federal and Non-Federal Costs		21,920,000	21,520,000	43,440,000

* The cost estimate is based on a summation of costs to cover/address identified individual tasks in the general scopes of work that are included in Enclosure C—Detailed Scope of Work.

CHAPTER VIII—QUALITY MANAGEMENT PLAN

8.1 QUALITY OBJECTIVE

The quality control objective is to achieve programmatic feasibility documents and services that meet or exceed both State and Federal requirements and are consistent with USACE policies and regulations. The USACE Quality Management System enterprise standards will be followed for all work during this study.

8.2 GUIDELINES FOLLOWED FOR TECHNICAL REVIEW

The guidelines for technical review are set forth in the South Pacific Division Quality Management Plan, CESPD-R 1110-1-8, the Sacramento District Quality Management Plan, and EC 1165-2-209, Civil Works Review Policy. The associated Review Plan can be found in Enclosure F.

8.3 ROSTER OF THE PROJECT STUDY TEAM

The roster of the project study team is provided in the Review Plan, which is presented in Enclosure F—Review Plan. Please refer to Table 6 of the Review Plan.

8.4 ROSTERS OF THE REVIEW TEAMS

The District Quality Control (DQC) team, Agency Technical Review (ATR), and Independent External Peer Review (IEPR) teams will be identified as the project progresses. Refer to the Review Plan, Enclosure F, which will be updated as the teams are identified.

8.5 DOCUMENTS TO BE REVIEWED AND SCHEDULE FOR REVIEW ACTIVITIES

Document reviews will be accomplished as follows:

- Seamless single discipline review will be accomplished before the release of materials to other members of the study team and before integration into the overall study. Section chiefs will be responsible for accuracy of the computations through design checks and other internal procedures, before ATR.
- All of the products of the tasks listed in the detailed scopes of work in Enclosure C—Detailed Scope of Work will be subject to DQC, ATR, and IEPR, as described in the Review Plan provided in Enclosure F.
- All products that are developed under contract require quality control through an independent review, which is the responsibility of the contractor. All products that are developed as work-in-kind require quality control through an independent review, which is the responsibility of the non-Federal sponsors. Quality assurance of the contractor's/non-Federal sponsors' quality control will be the responsibility of the PDT. Products developed under contract or as work-in-kind are subject to ATR and IEPR.

8.6 UPDATES TO THE APPROVED REVIEW PLAN

Changes or updates to the approved Review Plan will be completed and reposted onto the CESPD's website (<http://www.spk.usace.army.mil/organizations/cespk-pd/ReviewPlans.html>). The FRM-Planning Center of Expertise and the District will be notified.

8.7 COST ESTIMATE FOR QUALITY MANAGEMENT

The total estimated costs for USACE quality management (DQC, ATR, and IEPR) are presented in Table 7 in Chapter VII within the line items for WBS JDL00 and Independent External Peer Review.

8.8 PMP QUALITY CERTIFICATION

The Chief, Planning Division is to certify that the DQC for this PMP has been completed, that all issues have been addressed, and that appropriate quality control plan requirements have been adequately incorporated. The signed certification is included in Enclosure D.

8.9 STUDY CERTIFICATIONS

The following are the anticipated required certifications, as per CESPDP Quality Management Plan guidance for study process and documentation:

- ATR documentation shall be included with the submission package of the reports to CESPDP. Documentation of the ATR shall be accompanied by an ATR certification, indicating that the ATR process has been completed and that all technical issues have been addressed.
- As per the CESPDP Quality Management Plan, quality control certification requirements apply to project management plan, preconference documentation for issue resolution conferences, alternative formulation briefings, and draft and final feasibility report submittals.
- The CESPDP Chief, Planning Division, will certify the preconference documentation for the HQUSACE issue resolution conferences and the draft feasibility report.
- The District Commander will certify the final feasibility report, which includes the signed recommendation of the District Commander. This certification will follow the example in Appendix H of the CESPDP Quality Management Plan and will be signed by the Chief, Planning Division and the District Commander.

The certification requirement applies to all documentation that will be forwarded to either CESPDP or HQUSACE for review or approval.

CHAPTER IX—IDENTIFICATION OF PROCEDURES AND CRITERIA

9.1 EVOLUTION OF THE PMP

The PMP describes all activities from the initial tasks of the preparation of the final Framework Document and Feasibility Study, the PMP for project implementation and design agreement, and concludes with the CESPDP's support during the Washington-level review. As the PMP is based primarily on existing information, it will be subject to scope changes as the study and CVFPP develops. While this PMP includes tasks through the completion of the Feasibility Study, the level of detail in the scopes of work are greater for those tasks that occur before the first milestone conference. This PMP will be reviewed at the first milestone conference, and additional detail will be added to the scopes of work for the subsequent tasks. During each phase of the study, the current PMP, including the documentation of agreements on changes to the conduct of the study, will be addressed at each of the CESPDP milestone conferences and at the formal issue resolution conferences with HQUSACE, including the Alternative Formulation Briefing (AFB) and the Feasibility Review Conference (FRC).

9.2 THE PLANNING PROCESS

The Water Resource Council's Principles and Guidelines is currently being updated and is the basic planning guidance, which establishes a six-step planning process. This process is a conceptual planning sequence for developing solutions to water resource problems and opportunities. The Planning Manual and Planning Primer, both published by the Institute for Water Resources, provide excellent coverage of the planning process. The South Pacific Division also provides training in the six-step process.

9.3 POLICY

The policies that govern the development of projects are contained in the Digest of Water Resources Policies and Authorities, EP 1165-2-1.

9.4 USACE REGULATIONS

All of the USACE current regulations are included on the HQUSACE Internet homepage. The most important of these regulations is ER 1105-2-100, Planning Guidance Notebook. Quality control is covered in the CESPDP Quality Management Plan, CESPDP R 1110-1-8. The review of the products will be accomplished following EC 1165-2-209, Civil Works Review Policy.

9.5 PROCESSING REQUIREMENTS

In addition to ER 1105-2-100, the South Pacific Division has provided guidance on the processing requirements for each of the milestone submittals. This guidance is contained in CESPDP-ET-P memorandum, dated March 30, 2000, subject Processing of Planning Reports in the South Pacific Division.

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CHAPTER X—COORDINATION MECHANISMS

10.1 COORDINATION BETWEEN CVIFMS AND CVFPP

Coordination through communication is the critical role the CVIFMS will play between CVFPP and the various associated FRM and ecosystem studies that are moving forward in parallel. The non-Federal sponsors, DWR and the CVFPB, are expected to interact with the USACE at both the executive and project levels. Executive level briefings will be scheduled to inform senior level executives on project status and to solicit guidance on program direction. At the project level, review, communication, and lead roles will be established, as identified in Enclosure C—Detailed Scope of Work. Details concerning delivery management, other organizational roles, deliverable tracking, financial reporting, and other aspects of day-to-day program management will be developed during the initial planning phase of the work effort.

As part of the Communication Plan update to be implemented immediately after approval of this PMP and FCSA Amendment, coordination and communication strategies and procedures will be developed between the various associated PDTs, studies, and projects focused on:

- Formal communication structure or adaption of an existing format with the CVFPP and CVIFMS teams on executive, management, and team levels.
- Internal communication and review structure of PDT and discipline information distribution.
- Internal communication and review structure with other associated study PDT

10.2 PUBLIC INVOLVEMENT MILESTONES

Two of the milestones in the CESP civil works study process have been established specifically for providing a forum to receive public input. The first of these is the initial public workshop, F1, which is an opportunity to present the study to the public, to obtain input and public opinions, and to fulfill the NEPA scoping meeting requirements. The second opportunity for public input during the study phase occurs during the final public meeting, F6, which comes after the release of the draft report for public review and is an opportunity to present the findings of the draft report to the public and to receive public comment.

10.3 STUDY SPECIFIC PUBLIC INVOLVEMENT ACTIVITIES

Public involvement is anticipated throughout the CVIFMS program. The USACE CVIFMS and State CVFPP efforts will be closely coordinated in the public involvement process. The CVIFMS team will be the conduit for coordination with CVFPP staff on Central Valley flood management activities. The USACE and non-Federal sponsors will formulate and conduct the outreach and public involvement for the study. This will consist primarily of coordinating the study scope, results, and solutions with the public, conducting public meetings and workshops, and responding to public inquiries. Enclosure G, Communication Plan, provides more detail on specific communication strategies and public involvement activities, including a schedule for anticipated public involvement actions and dates.

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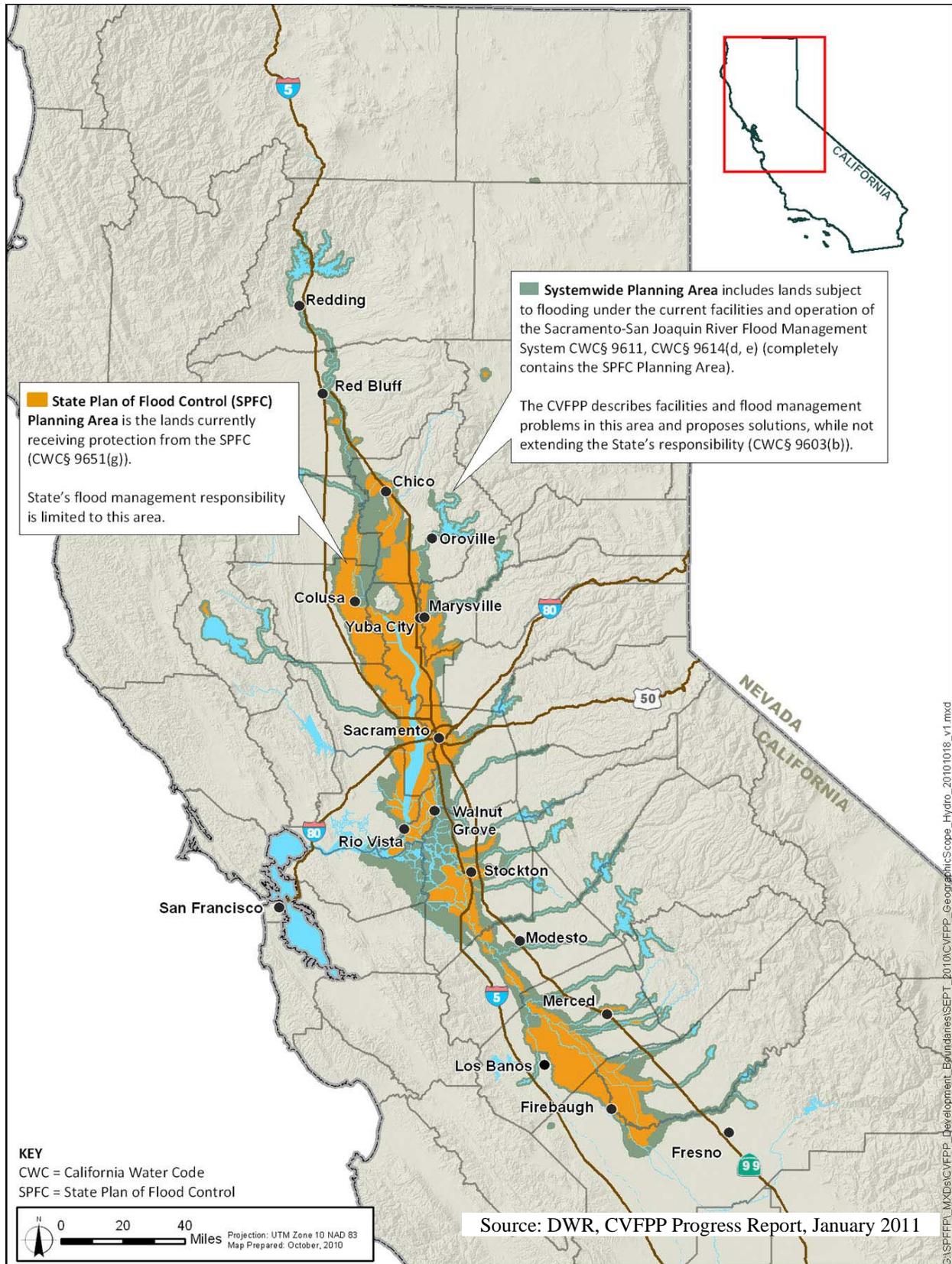
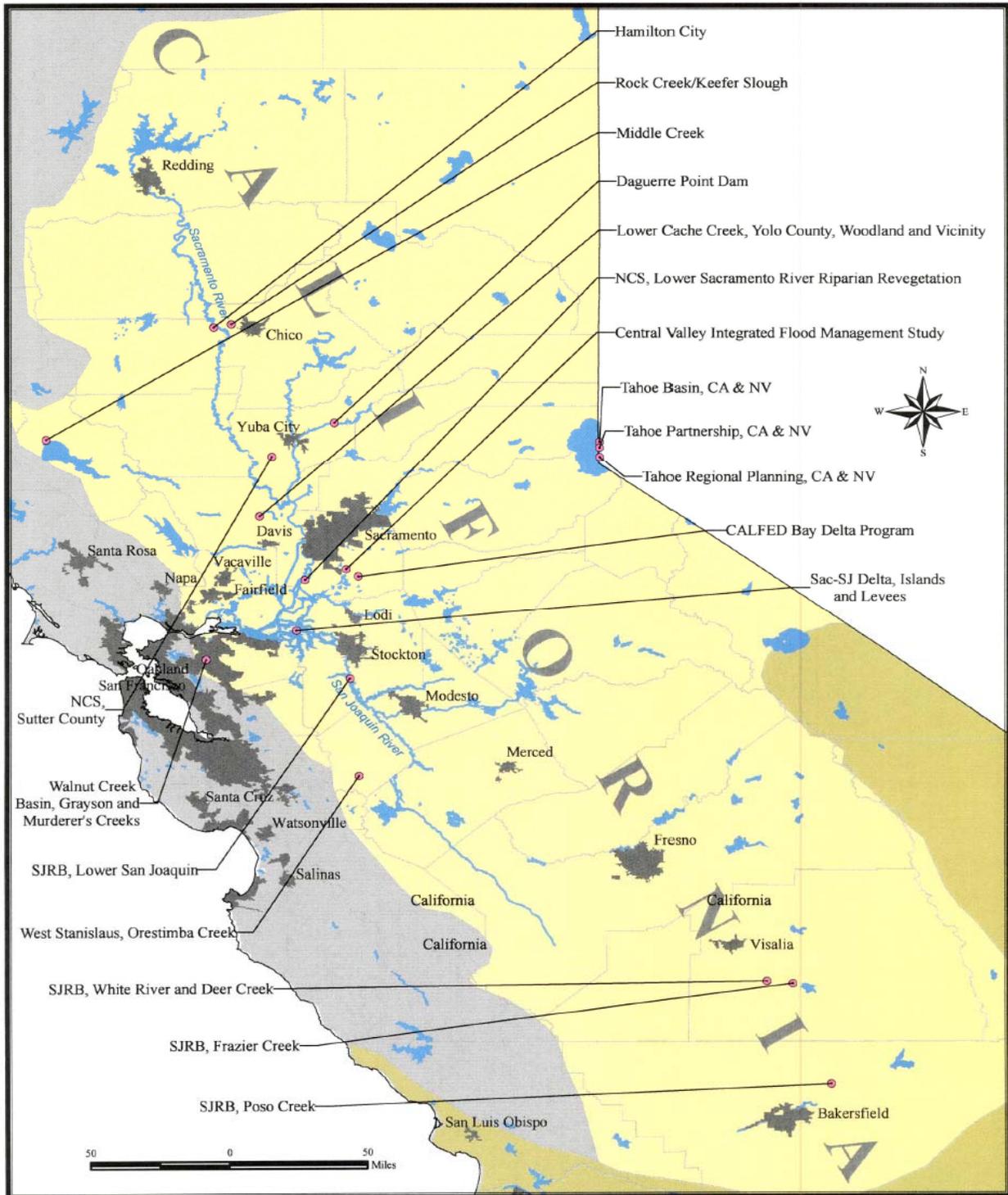


Figure 2. Central Valley Flood Protection Plan (CVFPP) Planning Areas.

SACRAMENTO DISTRICT CIVIL PROJECTS, FY 2011



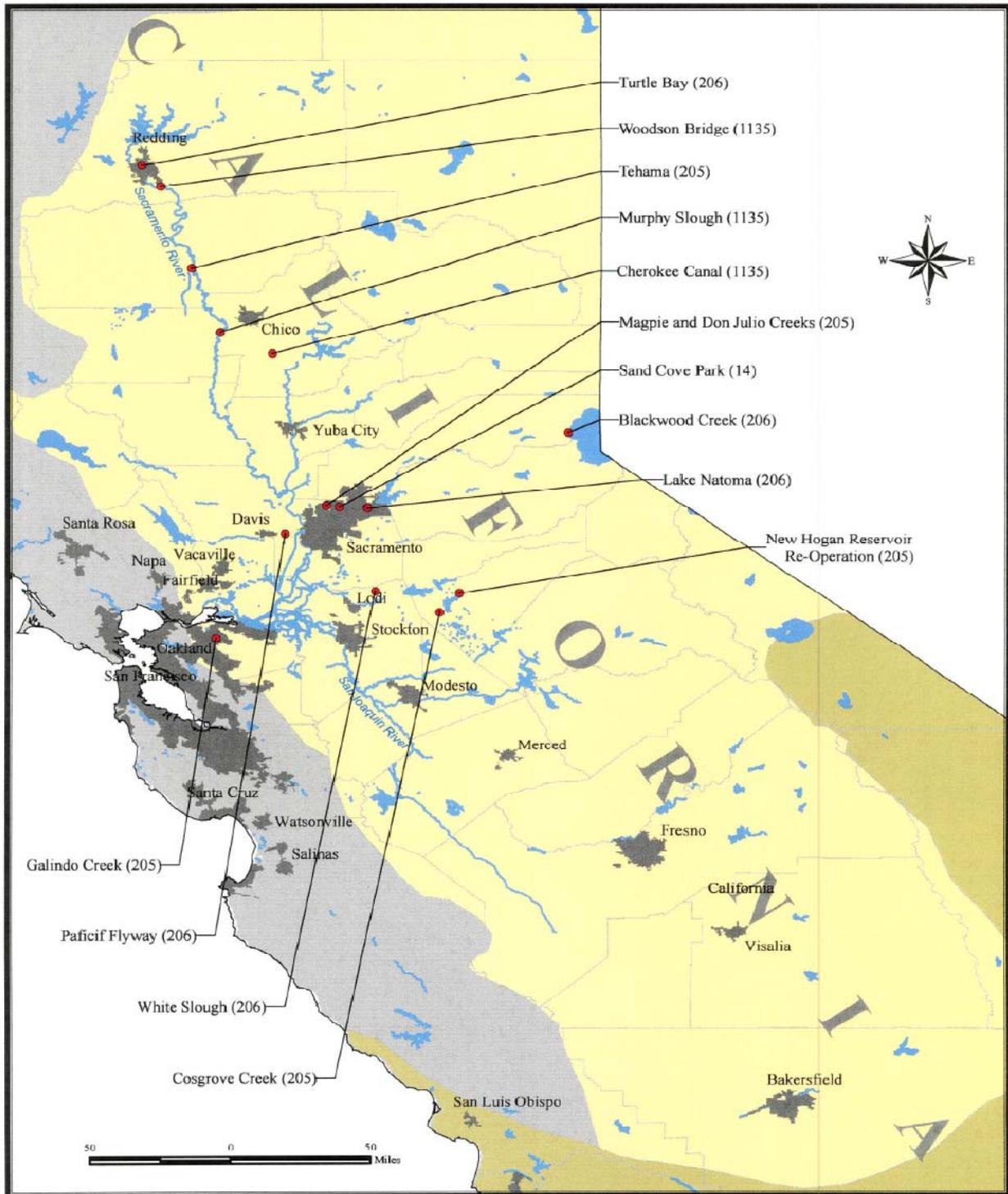
GENERAL INVESTIGATIONS



U.S. Army Corps of Engineers
Sacramento District, GIS Unit
January 2010

Figure 3. USACE, Sacramento District Civil Projects, 2011: Studies.

SACRAMENTO DISTRICT CIVIL PROJECTS, FY 2011



CONTINUING AUTHORITIES PROGRAM



U.S. Army Corps of Engineers
Sacramento District, GIS Unit
January 2010

Figure 5. USACE, Sacramento District Civil Projects, 2011: Continuing Authorities Program.

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**ENCLOSURE B—CESPD MILESTONE SYSTEM
FEASIBILITY STUDY PHASE**

MILESTONE NAME	DESCRIPTION
Initiate Feasibility Phase	CESPD Milestone F1 ¹ —This is the date the CESPDP receives Federal CVIFMS study funds.
CVIFMS Study Pub Workshop (F2)	CESPD Milestone F2—This is a public meeting/workshop to inform the public and obtain input and public opinions and fulfill scoping requirements of NEPA.
CVIFMS Study Conf #1 (F3)	CESPD Milestone F3—The CVIFMS scoping meeting is with HQUSACE to address potential changes in the PMP. It will establish without-project conditions and screen preliminary plans.
CVIFMS Study Conf #2 (F4)	CESPD Milestone F4—The Alternative Review Conference will evaluate the final plans, will reach a consensus that the evaluations are adequate to select a plan, and will prepare AFB issues.
Date of AFB	CESPD Milestone F4A—AFB is for policy compliance review of the proposed plan with HQUSACE to identify actions required to prepare and release the draft report.
Public Review of Draft Report	CESPD Milestone F5—Initiation of field level coordination of the draft report with concurrent submittal to HQUSACE through CESPDP for policy compliance review.
Final Public Meeting	CESPD Milestone F6—Date of the final public meeting.
CVIFMS Review Conference	CESPD Milestone F7—Policy compliance review of the draft report with HQUSACE to identify actions that are required to complete the final report.
CVIFMS Feasibility Study Report with NEPA	CESPD Milestone F8—Date of submittal of final report package to CESPDP-ET-P, including technical and legal certifications, compliance memorandum, and other required documentation.
MSC Commander's Public Notice	CESPD Milestone F9—Date of issue of the Division Commander's Public Notice. Congressional notification would occur two days before. The report and supporting documentation would be forwarded to HQUSACE. This milestone is used as the completion of the feasibility report in the CMR.
Filing of Final EIS	Date that the notice appears in the <i>Federal Register</i> . Letters for filing would be furnished by HQUSACE.
Chief's Report to Assistant Secretary of the Army (ASA) (Civil Works)	Date of the signed report of the Chief of Engineers.
Record of Decision Signed	Date that the Record of Decision is signed by the ASA (Civil Works) when forwarded for authorization.
President Signs Authorization	Date President signs authorizing legislation.

¹F1 through F9 are the historical designations for the CESPDP milestones.

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ENCLOSURE C—DETAILED SCOPE OF WORK

The USACE CVIFMS team worked with the California CVFPP non-Federal sponsor staff to help define the general scopes and potential tasks described in this document. These scopes and tasks represent “place holders” as the CVFPP and CVIFMS teams progress forward and information is developed to fully refine tasks and scopes. This scope is presented as an adaptable and “living” strategy for the development of CVIFMS and related products, which will be prepared in close coordination with the CVFPP processes and efforts. Efficiency, communication and collaboration are the primary objectives incorporated throughout these scopes of work, processes, and products.

The CVIFMS will be developed in an integrated water resource management context and will complement the CVFPP system level planning strategy, with an emphasis on developing a Federal/State implementation process. The USACE Engineering Circular 1105-2-411 provides a framework for identifying roles and responsibilities for the CVIFMS to be developed in coordination within the CVFPP process. These roles and responsibilities (including lead, communication, and support) are identified in this scope of work. The study will include two major efforts, as follows:

- **Framework Document (due early 2012)**—This programmatic implementation document will be developed in a format and context that clearly and directly corresponds to the 2012 CVFPP Report. The document’s primary purpose will be to provide a status update and a strategy that defines how the CVIFMS will be coordinating with the CVFPP in moving toward a Federal/State FRM implementation process for the CVFPP, including possible immediate feasibility study implementation recommendations. The targeted audience is Congress and the California Legislature to inform them of the project and help justify the need for funding.
- **Feasibility Study (due 2017)**—The Feasibility Study will be a programmatic level study prepared within an integrated water resource management context that will be submitted for Congressional authorization. The study will incorporate CVFPP shared data, and the content will be coordinated with the 2017 CVFPP Report. The study will provide an FRM evaluation of the Central Valley with a recommended process for Federal/State implementation and cost sharing. The strategy is for the study focus to be at the feasibility level where needed so that alternatives, inclusive of the State Systemwide Investment Approach, can be evaluated and Federal recommendations can be implemented following completion of the study. A joint NEPA/CEQA document will be developed in support of the study alternatives and recommendations.

Descriptions of general and potential tasks to support the CVIFMS process for the Framework Document and the Feasibility Study are presented on the following pages. These tasks are based on information developed during the initial planning phase of the project conducted during 2010-2011 jointly by the USACE and the non-Federal sponsors, but have not been coordinated completely with other efforts. Tasks that the USACE will perform in the lead role will be conducted in coordination with the non-Federal sponsors. They will include facilitation and generation of technical reports and work products for the CVIFMS development.

In developing this PMP, the USACE and the non-Federal sponsors have had multiple discussions regarding how existing flood management and protection programs fit in with the goals of the CVIFMS effort. The tasks presented in this PMP are focused on integrated flood management actions that are designed to be complementary to but not duplicative of other individual projects throughout the Central Valley. This PMP includes cost estimates associated with regional measures that could improve flood risk management. The scope and cost of the tasks are subject to change and refinement during the course of the CVIFMS program as more information becomes available.

FRAMEWORK DOCUMENT

WBS# JJ000 PLAN FORMULATION AND EVALUATION

Tasks to be completed by non-Federal sponsors

- **2012 CVFPP Report Tasks**—The non-Federal sponsors will complete the 2012 CVFPP Report tasks in coordination with the USACE, and coordinate with the USACE on the preparation of the Framework Document.

Tasks to be completed by the USACE (support role)

- **Review of 2012 CVFPP Report Documents**—This task will involve coordinating technical review by the Sacramento District of 2012 CVFPP Report documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **CVIFMS Programmatic Implementation Framework Document**—The plan formulation phase of the CVIFMS process will include the preparation of a Programmatic Implementation Framework Document (companion document) to the CVFPP Initial Report, which is due January 1, 2012. This companion document will be developed in a format and context that clearly and directly correspond to the 2012 CVFPP Report. The document's primary purpose is to provide a status update and a strategy that defines how the CVIFMS will be coordinating with the CVFPP in moving toward a Federal/State FRM implementation process for the CVFPP, including possible immediate feasibility study implementation recommendations. The targeted audience is Congress and the California Legislature.

WBS# JLD00 TECHNICAL REVIEW DOCUMENTS

Tasks to be completed by non-Federal sponsors

- **Review Tasks**—The non-Federal sponsors will complete technical reviews of tasks accomplished by the USACE for the Framework Document.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed for the 2012 CVFPP Report.

Tasks to be completed by the USACE (lead role)

- **Agency Technical Review**—The quality control objective is to complete the Framework Document and meet or exceed non-Federal sponsor requirements consistent with the USACE policies and regulations. This work includes all costs associated with the USACE DQC and ATR of the Framework Document draft and final reports, to ensure that the Framework Document complies with law, policies, regulations, and sound technical practices.
- **Review Guidelines**—The guidelines for review are set forth in the South Pacific Division Quality Management Plan, CESP R 1110-1-8; EC 1165-2-209 on Civil Works Review Policy, and in the corresponding District Quality Management Plan. All review costs are shared.

- **Office of Counsel Review**—The Office of Counsel will be an integral part of the PDT and is responsible for providing timely preventive advice and counsel on all aspects of product delivery. The Office of Counsel will review the draft and final versions of the Real Estate Plan, any EA, EIS, or EIR including any ROD or FONSI, and any issue or white papers sent to Division or HQ. A member of the Office of Counsel will be assigned to the PDT, will attend PDT meetings, will coordinate with PDT members as appropriate, and will be available to the various working groups as needed for legal consultation. The Office of Counsel PDT member will keep appropriate members of the Office of Counsel, including the District Counsel, and Lead Civil Works, Environmental, and Real Estate attorneys informed of significant legal issues confronting the PDT. The Office of Counsel PDT member will also assist the PDT in coordinating reviews of documents with the appropriate attorney in the Office of Counsel.

FEASIBILITY STUDY

WBS# JA000 ENGINEERING STUDIES

WBS# JAA00 Surveys and Mapping except Real Estate

Tasks completed or to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with surveying and mapping tasks will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.
- **Surveys, Floodplain**—Floodplain surveys in the Central Valley have been performed by the non-Federal sponsors under its Central Valley Floodplain Evaluation and Delineation (CVFED) Project. The vertical datum for this effort will be the North American Vertical Datum of 1988. The non-Federal sponsors will have additional processing of the LiDAR data performed to produce the topographic maps for the study area. DWR will prepare a report documenting the purpose, assumptions, method, specifications, and results of the work. The report will be complete with tables, charts, graphs, maps, and orthographic photos. The mapping will meet US Bureau of the Budget's United States National Map Accuracy Standards and will comply with standards and requirements of Design Manual 4-805-10, "Surveying and Mapping," dated December 1991. The final product of survey and mapping will be in a GIS format produced in ArcInfo and Microstation files.
- **Surveys, Channel Cross-Sections**—The channel cross-sections will be produced from LiDAR data point files that were captured in the 2008 timeframe or conventional survey means. Bathymetric and ground-based surveys are being collected under DWR's CVFED program to augment the LiDAR data to complete the channel cross-sections. The final product of the surveys will be reviewed by USACE to ensure that elevations and dimensions from the upstream study limit to the downstream study are reasonable and appropriate. Bridges and other hydraulic structures will be incorporated in the channel surveys, with two cross-sections being surveyed upstream and two cross-sections downstream of the bridges/hydraulic structures and constrictions, in addition to the surveys of the actual hydraulic structures. Additional survey data required outside of the extents of CVFED project survey data and within the limits of the CVIFMS study area will be gathered and processed by the sponsor for use in hydraulic modeling. The new survey data will follow the same specifications, guidelines, and review process as described in the preceding paragraphs.
- GIS data will be generated and entered into the Sacramento District Enterprise GIS system in Federal Geographic Data Committee (FGDC) mandated format.

Tasks to be completed by USACE (support role)

- **Surveys, Floodplain**—The USACE will review the survey and mapping ArcInfo and Microstation files produced by the non-Federal sponsors to ensure that all products comply with standards and requirements of Design Manual 4-805-10, “Survey and Mapping,” dated December 1991.
- **Surveys, Channel Cross-Sections**—The USACE will review the channel cross-sections produced by the non-Federal sponsors to ensure that elevations and dimensions from the upstream study limit to the downstream study limit are reasonable and appropriate.
- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Mapping, Geospatial Data**—This task will be performed by the USACE, with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for the CVIFMS development. The task is expected to include the following components:
 - Develop a Geospatial Database Management Plan, including standards for surveying and field collection of data that would be conveyed by the USACE personnel, other agencies, and contractors to the GIS and Mapping Section. This will be done so that the product will be consistent with the other data in the report and that geospatial data will be collected using the same criteria/standards. The management plan will also identify sources of cadastral data and equipment and storage requirements.
 - Develop field collection procedures related to geospatial data. This includes surveying criteria related to accuracy and under-bridges requirements.
 - Develop vertical control survey guidelines for the Central Valley and Delta similar to those recently developed for the New Orleans and Gulf Coast areas. The special guidelines were needed because of subsidence issues. The engineering/survey community needs similar guidelines for the Central Valley for the same reason.
 - In addition to the above-mentioned items, the CVIFMS program may include a cost benefit analysis for developing a real-time Global Positioning System correction service for the Central Valley. The service would require hardware installation and maintenance and would expand on existing local survey operations that cover developed areas, but not more remote flood control areas. The system could be used for vertical control for all surveys involving design level topographic surveys, FEMA elevation certificates, Delta tide gage corrections, and survey control for early implementation projects. The system would also benefit the California Department of Transportation (Caltrans) and other agencies.
 - The data management activity will include a task for a communication protocol to avoid duplication of effort. The task will also involve a document/data management plan and system for cataloging and retrieving previous studies and GIS data that will build on existing systems used by the USACE and DWR.

WBS# JAB00 Hydrology and Hydraulics Studies

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP and the CVFED PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with hydrology and hydraulics tasks will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors, in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Hydrology**—This task will be performed by the USACE with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for the CVIFMS development. This task will incorporate material provided by the non-Federal sponsors if the USACE hydrology team finds that the non-Federal sponsors' updated hydrology meets USACE standards. This work will supplement the work that was conducted for the Comp Study completed in 2002. Specific tasks may include the following:
 - Identify existing, comprehensive hydrology models/data for Federal levee reaches;
 - Summarize State efforts at incorporating climate change data;
 - Expand the CVFPP “one-event” climate change investigation to provide probability frequency curves for a more robust analysis of full events;
 - Provide a programmatic analysis of water supply management in coordination with the State’s integrated water resources management planning process;
 - Investigate system-wide effect of flows on localized components and provide a sensitivity analysis to ascertain the downstream/upstream effects;
 - Provide reservoir operations/reregulation analysis, especially at Folsom, Shasta, and Oroville, and use the State’s climate threshold study to help prioritize which reservoirs to study; and
 - Develop a system-wide reservoir optimization model, including multipurposes for fish and wildlife, water supply, and FRM. Incorporate reservoir operations based on longer-term forecasts. Identify where Dam Safety Assurance Program studies may change without-project floodplains or offer opportunities for dam modifications that would benefit downstream conditions.
- **Hydraulic Design**—This task will be performed by the USACE with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for CVFPP and CVIFMS development. The task includes all hydraulic analyses necessary for existing conditions, future without-project conditions, evaluation of alternatives, and preparation of design and cost estimates for optimization studies and the development of the CVIFMS plan. Tasks may include the following:
 - Compile region-wide modeling data and incorporate DWR’s analysis of levee safety zones.

- Identify issues with the State’s “library of models,” such as how and when the models are reviewed.
- Coordinate the without-project condition with CVFPP and other associated FRM studies:
- Incorporate hydraulic survey data:
 - Joint USACE/DWR effort to document highwater mark data after large flood events;
 - Convert existing gages to a more uniform datum that includes providing QC on the gage results; and
 - Develop program for regular bathymetry survey updates.
- Upgrade to newer hydraulic models being developed by DWR.
- Identify areas where integration between the USACE and DWR is critical, such as Federal interest related to floodplain economics and the USACE risk analysis.
- Participate in a high-level management task force.

The hydraulic design task will include documentation of the results of any modeling studies. The USACE will review the hydraulic design work done by the non-Federal sponsors. Coordination with non-Federal sponsors will include a review of technical and operational criteria for the hydraulic features to be included.

- **Floodplain Studies**—This task will be conducted in conjunction with the non-Federal sponsors with review and coordination by USACE Hydrology and Hydraulic Branch. Floodplain study tasks include use of present and future condition overflows for 10-, 50-, 100-, 200, and 500-year flood frequencies to determine floodplain boundaries and depths of flooding in the study area. In coordination with the non-Federal sponsors, the study’s scope will include an analysis of how urban areas can achieve 200-year level of protection expeditiously before addressing system problems protecting nonurban areas, possibly through the 104/408/404 process. The floodplain studies will be conducted with a one and two-dimensional hydraulic model as developed as part of CVFED. This task also includes tables and plates to be included in the appendix, report review, response to comments, and support to the project planner during plan formulation and others during the study phase. Residual floodplains will also be developed to characterize any residual risk left over after the project is implemented. In conjunction with the floodplain studies, a task under the CVIFMS program may be implemented to interpret and summarize floodplain requirements and incorporate the information in the outreach program.
- **Sedimentation Studies**—This task will be conducted in conjunction with the non-Federal sponsors with review and coordination by the USACE. This task includes sediment transport analysis through the Central Valley. A sediment transport analysis will also be conducted for the development and analysis of various alternatives. A sedimentation report will be prepared documenting the studies, analysis, and conclusions, complete with charts, photographs, and test results. Results of the sedimentation studies will be used with other data to determine the uncertainties in the stage-discharge rating curves to be used in the risk analysis. This task includes completion of a draft and final Hydrologic and Hydraulic Design Report to be included in the Engineering Appendix.

WBS# JAC00 Geotechnical Studies

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with geotechnical engineering will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Geotechnical**—This task will be performed by the USACE with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for CVIFMS development. One of the major work products is anticipated to be a geotechnical report for the CVIFMS. The final geotechnical report will include the following:
 - Descriptions of the existing conditions in the Central Valley (including geomorphology and general groundwater conditions);
 - CADD (GINT format) drawings of logs of explorations;
 - Tables of laboratory results and engineering parameters;
 - Structural design parameters;
 - Results of any slope stability, seepage, settlement, and risk-based analyses;
 - General geotechnical recommendations for the selected designs; and
 - Levee fragility curves must be comparable to those produced using procedures outlined in ETL 1110-2-556 (28 May 1999)
- The details of the evaluations will be developed in coordination with the non-Federal sponsors. It is expected that the investigations will include the following:
 - Inspection of completed works as part of the effort to determine without-project conditions;
 - Continuing support for DWR FloodSAFE technical working groups;
 - Development of system-wide geotechnical design requirements, including specific consideration of criteria differences between the USACE and the non-Federal sponsor; and
 - Preparation of an operations and maintenance manual to be used by local sponsors.

WBS # JAE00 Engineering and Design Analysis*Tasks to be completed by non-Federal sponsors*

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with engineering and design tasks will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **EIP Support**—Continued support for Early Implementation Projects (EIP) and their associated reimbursement and crediting programs will be provided.
- **Review of CVFPP Documents and Processes**—The task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—The task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Design Appendices**—This task will be performed by the USACE with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for CVIFMS development. The USACE will develop generalized measures that can be used for guidance in developing CVIFMS projects or alternatives. In addition, the USACE will work in coordination with the non-Federal sponsors to prepare the feasibility-level design and cost estimates for structural components of alternatives to be evaluated. The design work will include preparation of an appendix that describes the selected features. The report will include plan views and typical cross-sections of structural components, which may include hydraulic structure features, relocations, channel details, bridge crossings, and operation and maintenance requirements. Mitigation plan development will be coordinated with Planning ERB.

Microstation will be the data platform used for all design work, and all data will be compatible with the ArcInfo format. The design team must comply with ER 1110-2-1150 (August 31, 1999) Appendix C in developing the appendix, which will include maps, charts, and plates, with a focus toward identifying the design and cost feasibility of the alternatives, optimization studies, and the NED plan. The type of equipment used during construction, the timing and duration of equipment use, the duration of overall construction period, and the affected construction area will be estimated for use in evaluating environmental impacts.

All work effort being completed by the non-Federal sponsors will include support to the entire USACE PDT throughout the feasibility report preparation, draft and final report, feasibility report reviews, preparation of response to comments, and study conference attendance.

- **Draft and Final Basis of Design/Engineering Appendix**—The USACE and non-Federal sponsors will coordinate the preparation of narratives and plates for the draft and final appendix for components of alternatives. They will assemble all other engineering reports, including plates, tables, and figures, into a draft Engineering Appendix for the Feasibility Study. Before finalization of draft or final input developed by the non-Federal sponsors, a USACE Engineering Design PDT member will review, coordinate, and approve.
- **Efforts associated with utility encroachment inventory and/or relocation.**
- **Development of estimated quantities to support cost estimating for any particular alternative.**
- **Support from landscape architecture for mitigation or ecosystem restoration.**

WBS# JB000 ECONOMIC STUDIES*Tasks to be completed by non-Federal sponsors*

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with economic studies will coordinate with USACE counterparts and provide technical reviews of

USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—The task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—The task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Economic Analysis**—This task will be performed by the USACE with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for CVIFMS development. One task that may be completed is development of a conceptual system model for CVIFMS to evaluate improvements to the system on a broad scale. To the maximum extent practicable, the economic analysis will use information developed as part of the CVFPP. A more traditional approach will include determining valuation and structural characteristics (by land use) by using county assessor parcel information data, Marshal & Swift Valuation, and site visitation. Existing and future conditions would be evaluated based on expected, agreed-on, future land use changes. Damages would be estimated for structures, contents, crops, emergency costs, automobile damage, road damage, savings in flood proofing costs, advanced bridge replacement, transportation costs savings, and employment benefits. Depth-damage relationships used would come from other studies in the CESPDP with similar characteristics. Damages would be estimated for each floodplain event using HEC-FDA, incorporating R&U, and FLO-2D for FLO-2D developed floodplains. Stage-damage curves would be developed for use in the HEC-FDA program to estimate expected annual damages (requiring flow-frequency, stage-flow, and geotechnical fragility curves from the Engineering Division). In addition to flood damages, the economic studies will encompass environmental restoration and other resource areas. CVIFMS alternatives could have significant social, economic, and environmental effects that could be addressed in other accounts. Benefits and residual damages would be determined for CVIFMS alternatives. It is anticipated that draft and final economic appendices would be developed for the Feasibility Study.

WBS# JC000 REAL ESTATE STUDIES

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with real estate tasks will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Real Estate Plan and Report Documents**—This task will be performed by the USACE Real Estate Division (CESPK-RE) with coordination by the non-Federal sponsors. It will include facilitation and

generation of technical reports and work products for CVIFMS development. The USACE work will include consideration of the study area on a programmatic level, and anticipated tasks will consist of coordination, preparation of the real estate plan, review and revision of report documents, preparation of gross appraisal and real estate maps, physical taking analysis, preliminary attorney's opinion of compensability, rights of entry, cost estimates, real estate input to PMP, institutional financial capability analysis, and technical input.

- **Real Estate Coordination and Evaluations**—This task will include all the coordination and evaluations required to complete the real estate effort for the Feasibility Study. Major work efforts will include the following:
 - Real Estate Coordination—Includes CESPCK-RE participation in team meetings, negotiation of work requirements, coordination with other offices on study data needed for real estate's major study products, and monitoring of progress and findings associated with real estate study products.
 - Levee Ownership—Identify levee ownership, ingress and egress related to ownership and levee inspection/repair, easement requirements, transportation corridors, and utility constraints. As part of the ownership evaluation, the CVIFMS project may include an analysis of agreements for incorporation in the outreach program for levee improvements.
 - Gross Appraisal—This work will include preparation of a detailed estimate of all real estate costs associated with acquisition of the real property requirements on a programmatic level (see ER 405-1-12, Chapter 12, Section III, Appraisals, paragraph 12-12b, and Real Estate Policy Guidance Letter Number 3, Guidance for Preparation of Gross Appraisals).
 - Baseline Real Estate Cost Estimate—This work includes accounting for the plan's total estimated real estate cost in Code of Accounts format, as required by EC 1110-2-528 under Feature Codes 01, Lands and Damages. This estimate of total real estate cost should include estimated costs for all Federal and non-Federal sponsors activities necessary for completion of the plan. The costs will necessarily be programmatic and not a detailed, parcel-by-parcel analysis.
 - Physical Takings Analysis—Analytical task to evaluate if the plan development hydraulically affects property by taking or diminishing property or rights for the public's use by modifying the frequency, depth, or duration of water on the property.
 - Preliminary Attorney's Opinion of Compensability—Investigation and attorney's determination, if owners of facility's or utility's affected by the plan have a vested and compensable interest in the property, with regard to the real estate taking. If so, the obligation or liability of the Federal government is the cost of providing substitute facilities or utilities, if necessary, for publicly owned roads and utilities, as well as privately owned railroads and utilities.
 - Rights of Entry—CESPK-RE will coordinate requests and work with the sponsors to obtain rights-of-entry for environmental, cultural resources, geotechnical, survey, and any Hazardous, Toxic and Radioactive Waste (HTRW) exploration work required. Rights-of-entry must be obtained before testing can be done on private property.
- **Report Preparation**—This task will include completion of real estate documentation for the study. Major work efforts will include the following:
 - Preparation of a real estate plan, which is an overall plan describing the minimum real estate requirements (see ER 405-1-12, Chapter 12); and
 - Review and revision of report documents, including all CESPCK-RE activities involved in reviewing the feasibility report and responding to CESPCK comments.

WBS# JD000 ENVIRONMENTAL STUDIES (Except USFWS)*Tasks to be completed by non-Federal sponsors*

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with environmental tasks will coordinate with Planning Division Environmental Resources Branch (ERB) counterparts and provide technical reviews of work products. The non-Federal sponsors will serve as the State CEQA lead in the preparation of the combined NEPA/CEQA document. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE Planning Division and Project Manager, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Planning Division ERB of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Planning Division ERB participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Notice of Intent**—This task involves preparation and publication of the Notice of Intent/Notice of Preparation for initiation of NEPA/CEQA compliance activities. Scoping and public outreach will be conducted as described under JI000 Public Involvement Coordination and Outreach.
- **Plan Formulation Participation**—This task includes: participating in the development of programmatic alternatives; evaluation and comparison of alternatives, including cost-effectiveness and incremental cost analysis; attending study team meetings; and providing input on other environmental aspects of alternatives.
- **Programmatic Environmental Analysis**—This includes identification of impacts, restoration benefits, and potential mitigation features of proposed alternatives on a programmatic level. Anticipated programmatic analyses include:
 - Existing Conditions—Utilize existing documentation (including aerial imagery), windshield surveys, and limited site surveys to document existing environmental conditions within the project planning area. This task will include identification of land uses and characterization of aquatic and terrestrial habitat.
 - Restoration Opportunities—Utilize the results of the existing conditions analysis, in conjunction with resource agency coordination, to identify opportunities for ecosystem restoration within the project planning area.
 - ESA Coordination—Complete Section 7 process to satisfy the Endangered Species Act; consult with the USFWS under Section 7, and prepare a Biological Assessment. Additional ESA survey work may be required. To assess effects to listed fish species, it may be necessary to conduct the Standard Assessment Methodology. Assist local sponsors in meeting their obligations under the California Endangered Species Act by providing biological information.
 - Mitigation Plan Development—Based on reported effects, Planning Division ERB in conjunction with USACE landscape architecture and USFWS, develop rough estimates of required mitigation and mitigation costs for single-purpose flood damage reduction plans; develop a more detailed

mitigation plan and costs for the NED based plan and recommended plan. The sponsors will select alternative mitigation sites for consideration, subject to approval by the Planning Division ERB.

- Air Quality—Perform an air quality baseline assessment, determine effects of proposed alternatives, and develop appropriate mitigation.
- Water Quality—Corps regulations require a Section 404(b)(1) analysis to determine the extent of water quality effects. The Section 404(b)(1) water quality effects analysis will be included in the environmental documentation. Identify and recommend LEDPA.
- Wetland Delineation—Wetland delineations will be prepared as described under WBS#XXX Regulatory
- Social/Environmental Justice: Evaluation of social impact and environmental justice with the selected plan(s).
- **Draft Feasibility Report and EIS/EIR**—This includes examining NEPA, CEQA, and other environmental related regulations; organizing and formatting data; describing alternatives, including construction durations and borrow and disposal areas; and preparing appropriate documentation. Reproduction and distribution of reports is discussed under "Feasibility Report Documentation and Process." Scoping and public outreach will be conducted as described under JI000 Public Involvement Coordination and Outreach.
- **Final EIS/EIR**—This task will be accomplished primarily by the Planning Division ERB with support from the sponsors. It includes the review of comments received on the Draft Feasibility Report and EIS/EIR, developing responses to those comments for inclusion into the Final Feasibility Report and EIS/EIR, and incorporate changes based on the responses into the final EIS/EIR.
- **Record of Decision**—The Planning Division ERB will prepare the draft Record of Decision (ROD). The draft ROD will then be submitted to South Pacific Division and HQUSACE.

WBS# JE000 FISH AND WILDLIFE COORDINATION ACT REPORT

Tasks to be completed by the USACE (lead role)

- **Fish and Wildlife Coordination Act Report**—This task will be conducted by the USFWS and managed by the Planning Division ERB. The Planning Division ERB will write a scope of work and will transfer funds to the USFWS for biological survey or assessment work, Habitat Evaluation Procedures analysis, and draft and final Coordination Act reports. The Planning Division ERB effort will also include monitoring USFWS work and providing that agency with required information, such as description of alternatives and maps of affected areas. The USFWS effort will include environmental data collection and evaluation of the environmental resources of the study area. The USFWS will also review and collaborate on the best ways to achieve the objective of integrating environmental benefits with flood protection measures. The USFWS will be invited to participate in meetings, to review alternative plans, and to assess the effect of alternatives on the environmental values of the study area. The USFWS will offer recommendations concerning formulation of alternative flood control plans. As part of this work effort, the USFWS will lead the habitat evaluation team and will prepare the Habitat Evaluation Procedures report. The USFWS will prepare a draft and final Coordination Act report, which will be included as an attachment to the CVIFMS NEPA/CEQA document.

WBS# JF000 HTRW STUDIES

Tasks to be completed by non-Federal sponsors

- The non-Federal sponsors are not planning to conduct HTRW investigations.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **HTRW Report**—This task will be performed by the USACE, with coordination by the non-Federal sponsors. It will include facilitation and generation of technical reports and work products for CVIFMS development. The USACE will conduct a programmatic evaluation of the study area to identify potentially major HTRW sites. HTRW studies will be conducted in accordance with ER 1165-2-132, HTRW Guidance for Civil Works Projects. Work will include review of the literature and coordination with Federal and State environmental agencies. The USACE will develop a baseline assessment of the Central Valley study area and will identify major potential HTRW issues. A narrative report will be prepared suitable for incorporation into the engineering appendix to the Feasibility Study. Depending on initial findings, additional effort for field surveys and coordination may be required. A parcel-by-parcel database search would not take place due to the prohibitively large size of the study area.

WBS# JG000 CULTURAL RESOURCES STUDIES*Tasks to be completed by non-Federal sponsors*

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with cultural resource tasks will coordinate with Planning Division ERB counterparts and provide technical reviews of work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the Planning Division ERB and Project Manager, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—The task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—The task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Cultural Resource Investigations and Documentation**— The Planning Division ERB will conduct those activities necessary to comply with Section 106 of the National Historic Preservation Act and other cultural resource laws and regulations, as applicable for the CVIFMS project. A Programmatic Agreement and Historic Properties Treatment Plan will be developed. If required, a Historic Landscape Study will also be completed. While the data collected for Sacramento Bank Protection Project will be available to support the CVIFMS, it is expected that substantial new data collection efforts for the CVIFMS cultural work will be needed in the southern part of the study area. Specific cultural resource activities are discussed below.
- **Records & Literature Search**— The Planning Division ERB will obtain a new records and literature search from the California Historical Resources Information System at the following information centers: Northwest, Northeast, North Central, Central California, and Southern San Joaquin Valley. The new search will encompass the area of potential effects for all feasibility study alternatives. This will update the records and literature search that was conducted for the Comp Study. The Planning Division ERB will also check other sources, such as the National Register of Historic Places, the California Historical Landmarks, the

California Points of Historical Interest, and the California Register of Historical Resources, for information on archaeological sites, historic properties, and historical landmarks of national, state, or local significance.

The Planning Division ERB will develop a centralized database library of cultural record searches/results for all Central Valley projects in the study area and will coordinate with Bureau of Reclamation, Bureau of Land Management, US Forest Service, California Department of Transportation, States Lands Commission (submerged resources inventory), and other appropriate agencies to develop a data sharing agreement.

- **Sites of traditional cultural or spiritual interest**— The Planning Division ERB will contact the California Native American Heritage Commission, applicable tribes, and other Native American groups to request information about locations within the area of potential effect that may have traditional cultural or spiritual interest. This activity is separate from the USACE responsibility to initiate government-to-government consultation with Federally recognized tribes, as described below.
- **Monitoring, Field Verification, and Inventory**—The Planning Division ERB will determine, based on the results of the new records search, those areas that require field investigations as part of the CVIFMS project. Archaeological monitoring could be required where geotechnical, engineering, and environmental field work or ground-disturbing activities may occur and where such activities could uncover or affect cultural resources. Field verification will be conducted for all known archaeological and historical resources and traditional cultural properties identified in the updated records check. Real Estate Rights of Entry will be required for all of these locations. In consultation with the California State Historic Preservation Officer, the Planning Division ERB will determine what areas may be subject to new archeological and historical field inventories during the feasibility study. It violates Federal law (16 USC, 470h-2[k]—Anticipatory Demolition) to demolish buildings, structures, or objects or to destroy archaeological resources before their inventory and evaluation for the National Register of Historic Places in order to avoid their consideration for treatment or preservation in study alternatives.
- **Report**— The Planning Division ERB will develop a scope and schedule and prepare a report for SHPO coordination that includes the results of the records and literature search, that discusses information regarding any sites of traditional or spiritual interest, that documents the method and results of all new field survey investigations and monitoring, that describes known cultural resources (historical, archaeological, architectural, or traditional) in the area of potential effects for each of the flood control or ecosystem restoration alternatives, and that assesses the impacts of these alternatives on cultural resources. The report will also describe the range of additional cultural resources studies necessary for PED and construction phases, potential future preservation or mitigation requirements, and their estimated associated costs.
- **PDT Member Support**— The Planning Division ERB will provide a cultural resources PDT member who will attend team meetings and perform other PDT duties as requested.
- **NEPA/CEQA Compliance**— The Planning Division ERB will prepare all documentation required for cultural resources in the draft and final NEPA/CEQA documents. The Planning Division ERB will respond to comments received during public review, regulatory agency review, and tribal consultation.
- **GIS**—The Planning Division ERB will maintain all cultural resources survey and site location data for the feasibility study in a password-protected GIS layer. GIS data will be managed in accordance with the Geospatial Data Management Plan. The specific locations of archaeological resources and many traditional sites are confidential under Federal and state historic preservation statutes, but it is understood that some level of information will be divulged for study purposes, in accordance with provisions in these statutes for agency planning.
- **Professional Qualifications**— The Planning Division ERB will ensure that all applicable government and contractor personnel meet or exceed Federal qualification standards for archaeology and historic preservation.

- **Section 106 Consultation**— The Planning Division ERB will develop a scope and schedule and will prepare a consultation plan that will likely be less specific than a Programmatic Agreement for inclusion in the NEPA compliance documentation and a final consultation plan before the signing of the Record of Decision. The consultation plan will stipulate those cultural resources actions that will be carried out over the life of the project. The Planning Division ERB will conduct all consultation with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and other signatories to the Programmatic Agreement. The Planning Division ERB will also ensure compliance with Section 106 of the National Historic Preservation Act for all applicable activities carried out during the feasibility phase. These include those actions that are undertaken, permitted, or licensed by the USACE or undertaken on behalf of the study by agents of the USACE and that have the potential to affect historic properties that are listed, eligible for listing, or potentially eligible for listing on the National Register of Historic Places.
- **Paleontology report**—If a paleontological report is required under CEQA, this effort must be conducted by the non-Federal sponsors.

WBS# XXX TRIBAL GOVERNMENT TO GOVERNMENT CONSULTATION

Tasks to be completed by the USACE (lead role)

- **Tribal Consultation**—The USACE tribal liaison PDT member will coordinate with US Bureau of Indian Affairs regarding Treaty/Tribal Trust issues and what would trigger coordination meetings, would provide government-to-government coordination and communications with tribal groups in the area of potential effect and will assist in the regulatory permit process, will prepare letters with the USACE Office of Council, will coordinate meetings, and will facilitate issues for USACE decisions.

WBS# XXX REGULATORY

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with regulatory tasks will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors, in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.
- **Streamlined Permitting**—This task involves researching the possibility for developing a streamlined permitting process for work to be completed by the non-Federal sponsors.

Tasks to be completed by the USACE (lead role)

- **Wetland Delineation and Regulatory Permitting**—Wetlands in the study area that may be affected by CVIFMS alternatives will be evaluated for Section 404 requirements and State and local laws. Effects of alternatives on wetlands and mitigation requirements will be determined. The task may include coordination with USFWS and report preparation on a programmatic level. The following specific activities are expected to be included in this task, and others may be added as the CVIFMS scope is refined:

- Provide a database for identifying aquatic, riparian, and wetland resources as needed,
- Identify historic cumulative impacts of where aquatic/riparian resources were and project the without-project future condition based on current trends,
- Provide system-wide guidance for regulatory permit preparation related to relevant issues and what information is available, before doing actual surveys; coordinate on this task with NMFS and USFWS,
- Identify environmental baseline and what mitigation may be required when using Nationwide Permit 31 for the USACE-constructed/authorized and transferred projects.

WBS# JH000 COST ESTIMATING

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, PDT team members involved with cost estimating will coordinate with USACE counterparts and provide technical reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

- **Cost Estimate**—Cost data will be prepared by the USACE Engineering Support Branch, in coordination with the PDT and non-Federal sponsors. Work will include facilitation and generation of cost engineering technical reports and other work products to support CVIFMS development. For the AFB, costs will be parametric based and the products will include cost estimates for the various alternatives (using quantities developed by the design engineers), a construction schedule to support escalation calculations, a total project cost summary (base cost, contingency, and escalation), and a draft cost engineering appendix that documents the costs and basis of contingencies. For the feasibility report, cost data will be developed in detail for the NED recommended plan and, the State Systemwide Investment Approach plan, if different from then NED plan. Detailed construction cost estimates will be developed utilizing the mandatory MII computer program (MCACES, 2nd generation). A total project schedule that includes design, contract acquisition and construction will be developed. A cost and schedule risk analysis will be performed (with participation from the PDT and non-Federal sponsors) to establish final contingencies and a risk report will be prepared. A total project cost summary will be developed to detail the total cost (Federal and non-Federal) of implementing the project, including construction costs, lands, easements, rights-of-way, relocations, and disposal areas, mitigation, engineering and design, and construction management. Summaries of annual costs and operation and maintenance will be developed. The cost engineering appendix (narrative basis of cost data) will be updated and, along with the draft MII estimate(s), be included in the draft engineering appendix to the draft feasibility report. The USACE will finalize the MII cost estimates based on comments received on the draft report. Cost Estimate data will be developed in accordance with ER 1110-2-1150, Engineering and Design for Civil Works Projects, ER 1110-2-1300, Cost Engineering Policy and General Requirements, ER 1110-2-1302, Civil Works Cost Engineering, EM 1110-2-1304, Civil Works Construction Cost Index System, ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works, EC 1105-2-410, Review of Decision Documents and the Agency Technical Review Guidance for Cost Engineering Products developed by the Cost Engineering Directory of Expertise.

JI000 PUBLIC INVOLVEMENT COORDINATION AND OUTREACH

Tasks to be completed by non-Federal sponsors

- The non-Federal sponsors will complete the public involvement coordination and outreach tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort. In addition, public involvement activities will be closely coordinated between the USACE PAO and the PAO for the non-Federal sponsors. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described in the following sections. A preliminary communication plan is provided in Enclosure G. This plan will be further developed in coordination with the non-Federal sponsors.

Tasks to be completed by the USACE (communication role)

- **Communication Plan**—The USACE, with support from the non-Federal sponsors as needed, will develop and execute a communication plan that is coordinated with the CVFPP communication strategy and in accordance with current USACE policy to effectively reach the affected community. A preliminary plan is provided in Enclosure G, which will be finalized in coordination with the non-Federal sponsors. Once finalized, the plan will result in development of key messages, will promote a work climate that is open, informed, and engaged in listening and being responsive, will build effective relationships, and will integrate strategic communications into the business process.
- **Information Conduit**—The USACE will use the CVIFMS as the Federal voice and information conduit for the CVFPP to the USACE District Support Team, Regional Integration Team, and Headquarters.
- **Data Sharing**—The USACE will use the CVIFMS as the informational nexus with CVFPP to ongoing FRM studies and programs to ensure consistency and coordination. Communication from the CVIFMS team will include regular updates to the Delta Leadership Team and other appropriate forums regarding the progress of the CVIFMS.
- **Coordination**—The USACE and the non-Federal sponsors will formulate and conduct the outreach and public involvement for the study. This task will consist primarily of coordinating the study scope, results, and solutions with the public, conduct public meetings and workshops, and respond to public inquiries. Detailed task descriptions follow.
- **NEPA Public Scoping Workshops**—It is anticipated that this task will be conducted by the USACE, with support from the non-Federal sponsors. The task will include developing a mailing list (based on the NOI mailing list) and preparing an invitation for the public workshops. The purpose of the public workshops will be to disseminate information on the CVIFMS project and to give the public an opportunity to comment on the scope of the study, the alternatives to be studied, and the issues to be addressed. Tasks will include planning and setting the agenda for the workshops, developing and delivering presentations, setting up and staffing a sign-in table, providing audio visual equipment and other materials, and performing recording duties. Following the workshops, memoranda will be prepared documenting the events.
- **Public Outreach Sessions**—The USACE and non-Federal sponsors will jointly coordinate public outreach sessions. The purposes of outreach sessions are to keep the public informed of the study progress and to solicit public input on potential flood risk reduction measures. This effort will include planning and setting the agenda, developing and distributing a public notice, developing and delivering presentations, setting up and staffing a sign-in table, providing audio visual equipment and other materials, and performing recording duties. Following the public outreach sessions, memoranda will be prepared documenting the events.
- **Public Review and Comment**—This task will be conducted by the USACE, with support from the non-Federal sponsors. The USACE will administer the statutory comment period and will incorporate public comments into the NEPA/CEQA compliance documentation for each study component. The USACE and the non-Federal sponsors will be responsible for addressing the comments.

- **Public Meetings**—The USACE and non-Federal sponsors will jointly coordinate NEPA/CEQA public meetings for the CVIFMS. The task will include updating the mailing list and preparing public a meeting notice. The notice will provide a summary of the draft Feasibility Study, a description of alternatives, and meeting information. The USACE will print and distribute the meeting notice. The purpose of the public meeting is to provide an opportunity for public comment on the draft Feasibility Study. Tasks will include planning and setting the agenda for the meetings, developing and delivering presentations, setting up and staffing a sign-in table, providing audio visual equipment and other materials, and performing recording duties. The USACE will organize and conduct the meeting and will prepare any visual displays. The USACE will provide a facility for the meeting and will prepare a memorandum documenting the meeting. The non-Federal sponsors will review the memorandum and will incorporate comments.

WBS# JJ000 PLAN FORMULATION AND EVALUATION

Tasks to be completed by non-Federal sponsors

- **CVFMP PMP Tasks**—The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. In addition, the PDT planning team members will coordinate with USACE counterparts and provide reviews of USACE work products. Additional tasks will be completed by the non-Federal sponsors in coordination with the USACE, as described below.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating Sacramento District participation in CVFPP work sessions and meetings, providing Federal perspective as needed.

Tasks to be completed by the USACE (lead role)

The following tasks will be performed by the USACE, with coordination by the non-Federal sponsors. They include facilitation and generation of planning reports and work products for CVIFMS development.

- **Programmatic Feasibility Study**—The plan formulation of the CVIFMS process will include a programmatic level study prepared within an integrated water resource management context. The study will incorporate CVFPP shared data, and the content will be coordinated with the 2017 CVFPP Report. The study will provide a FRM evaluation of the Central Valley, with a recommended process for Federal/State implementation and cost sharing. The current strategy is for the study focus to be at the feasibility level where needed so that alternatives, inclusive of the State Systemwide Investment Approach, can be evaluated and Federal recommendations can be implemented following completion of the study. This task will include reviewing authorities and researching the possibility of developing a system authorization that may allow more flexibility in matching fund credits for specific/regional projects in the overall CVFPP program.
- **Plan Formulation**—The Planning Division (including both Water Resources Branch and Environmental Resources Branch) will be responsible for the coordination and oversight of the CVIFMS process and documentation, meeting review requirements, and quality assurance to ensure compliance with the USACE planning procedures and policy, in cooperation with the project manager, PDT, and sponsors. For this study, this will include reviewing the previous Comp Study materials and documents to retain and reuse as much information as is consistent with today's conditions and current policies. This will be supplemented by ongoing coordination, meetings, correspondence, and public involvement activities with sponsors, contractors/consultants, stakeholders, elected officials, cooperating agencies, and the public (organizations, groups, and individuals). The Planning Division will support, facilitate, and expedite processing documents

with CESPDP and HQUSACE, consistent with CESPDP's Milestone System, through the Chief's Report and Record of Decision. Specific tasks are discussed below.

Plan formulation will incorporate environmental considerations using the Feasibility Study as a "filter" document for all projects in the region. All alternatives and recommendations will be provided simultaneously on a watershed scale for the overall study area. In addition, the plan formulation will include an evaluation of the effects that any changes in flood management may have on water supply and if there may be benefits to water supply from flood management alternatives.

- Planning Studies, Reviews, Coordination, and Study Management**—The Planning Division will develop, coordinate, and execute the planning program for the feasibility study, related resource requirements (PMP, schedule, budget, and required reviews), and documentation in coordination with the project manager, PDT, sponsors, and others. The Planning Division will also provide guidance, advice, and leadership on planning requirements and policies. The Planning Division will ensure that the Federal/USACE iterative planning process and review requirements are effectively executed and documented, including preparation of a Review Plan. The Planning Division will participate in meetings with the project manager, PDT, review teams, sponsors, contractors, concerned agencies, stakeholders, the public, officials, USACE echelons, and others. The Planning Division will communicate and correspond as needed, as well as advise and support the USACE and sponsor's contract managers and points of contact with execution of the work. The Planning Division will ensure compliance with pertinent planning regulations, policies, guidance, and quality management plans and practices. The Planning Division will prepare for and will participate in site visits, meetings, correspondence, and other actions as needed. The Planning Division will coordinate with the PDT to prepare, copy, and distribute the draft PMP for the PED Phase to the Agency Technical Review team. The Planning Division will coordinate, revise, copy, and distribute the final PMP for the PED Phase to the sponsors and to the CESPDP.

The Planning Division will coordinate with the non-Federal sponsor to ascertain their current and expected future thoughts on EIPs for when they want to initiate project components in advance for either 404, 104 credits, or 408 approvals.

- Review Pertinent Available Information**—The Planning Division will review, revise, and comment on the PMP updates, schedules, pertinent technical studies, reports, data, and other products and publications, news articles, meeting presentations and summaries, and contract scopes of work and modifications. These activities will include reviewing information developed in support of earlier studies, including the Comp Study, to determine if such items as problems, opportunities, planning objectives, management measures, alternatives, and technical analyses are still valid. Those that remain valid can continue to be used and those that are not will be reviewed and updated.
- Participate in Public Involvement and Agency Coordination**—The Planning Division will participate in the public involvement activities, in support of the CVIFMS project. This includes participating in the public scoping workshops to solicit public views on the feasibility study and its potential impacts. The Planning Division will also participate in board meetings, in-progress meetings, and executive meetings and will prepare related correspondence and products. The Planning Division will support preparation and execution of a public involvement plan and process. Workshops will be held during formulation and evaluation, as appropriate. The Planning Division will also review and comment on summary documentation for the public workshops and process.
- Continue Initial Planning, Prepare Pre-Meeting Documents, and Convene Scoping Workshop**—The Planning Division will participate with the PDT in the initial feasibility planning activities, such as confirming or revising the study's previous determinations regarding problems, opportunities, planning objectives, and management measures. The Planning Division will participate with the PDT in documenting existing without-project conditions, forecasting future without-project conditions, screening management measures, and identifying a preliminary array of alternatives. The Planning Division will prepare the Feasibility Study and will convene the CVIFMS public meetings.

- **Continue Refinements and Evaluate Alternatives**—The Planning Division will participate in the updating, refinement, formulation, evaluation, and screening of the CVIFMS flood damage reduction, ecosystem restoration, and recreation measures and alternatives to identify the final array of alternatives for detailed evaluation in the Feasibility Study. This task will include evaluation of alternative approaches, inclusive of the State Systemwide Investment Approach, for Federal interest. This task may also include developing recommendations for new studies that may require their own feasibility studies or other funding mechanisms before 2017.
- **Prepare Preconference Document for Alternative Review Conference and Convene Conference**—The Planning Division will prepare a preconference document. The Planning Division will advise, review, and comment on preliminary/interim draft versions with the PDT and ATR team. The Planning Division will support and cooperate in the ATR of the preconference document and then will revise the preconference document, based on comments from the ATR team. The Planning Division will reproduce the conference document and will distribute it to conference participants. The Planning Division will prepare for and will conduct the alternative review conference in coordination with PDT, ATR team, and CESP. The Planning Division, along with the project manager, will discuss technical and policy issues and will recommend actions to resolve the issues and prepare minutes of the conference in coordination with CESP.

The conference will mark the completion of the evaluations of the final array of alternatives and will prepare for the alternative formulation briefing (CESPD Milestone F4A) to be held with HQUSACE. The PDT will present the evaluation of the final array of alternatives that will be presented in the Feasibility Study. The ATR team leader will summarize the results of the ATR and the resolution of issues. These issues will normally involve the formulation, design, and detailed evaluation of the with-project conditions for the final array of alternatives.

The non-Federal sponsors will summarize the views of their agencies and will identify any issues that must be resolved before the selection of the State Systemwide Investment Approach. Federal interest will be reviewed. This conference will reach a consensus that the evaluations are adequate to select a recommended plan (the State Systemwide Investment Approach, NED, or NER plan). Participants in the conference will also identify and discuss policy issues that will be of concern at the AFB and will develop a list of the issues for consideration at the AFB.

- **Continue Plan Formulation and Evaluation, Prepare Prebriefing Document for the AFB, and Convene Briefing**—Based on guidance from the conference and input from the non-Federal sponsors and PDT, the Planning Division will further develop, refine, evaluate, and compare alternatives and will identify the NED and recommended plans. The Planning Division will identify preliminary cost allocations and will develop cost-sharing responsibilities. The Planning Division will coordinate more detailed cost estimates, will assess environmental effects and costs to mitigate those effects, and then will refine and quantify benefits of alternatives. The Planning Division will compare plans and effects, including cost effectiveness and incremental cost analysis, will identify the recommended plan, and will provide rationale. The Planning Division will identify known technical and policy issues and will recommend actions to resolve these issues, which will include describing the issue; providing background, options, and assessments; and recommending actions.

An Independent External Peer Review will be conducted during the continued planning between the F4 and F4A milestones. At this point there should be no unresolved technical or policy issues that could substantially change the study decisions and recommendations. The Planning Division will coordinate this review through the Flood Risk Management Planning Center of Expertise, which will be responsible for having an outside eligible organization conduct the review.

The Planning Division will prepare, reproduce, and distribute the pre-AFB document focused on the recommended plan and the policy issues identified at the Alternative Review Conference. The Planning Division will advise, review, and coordinate with the PDT, ATR team, CESP, and HQUSACE on the pre-meeting materials and arrangements. The Planning Division will reiterate steps as needed to ensure that the PDT and ATR team coordinate, review, revise, certify, process, and distribute the pre-AFB document. The Planning Division, in conjunction with the rest of the PDT, will prepare for and conduct the AFB

conference. The Planning Division will discuss technical and policy issues and will recommend actions to resolve these issues. The Planning Division, along with the project manager, will coordinate with CESPD and HQUSACE to prepare the Planning Guidance Memorandum and any follow-up actions.

- **Continue Plan Formulation, and Develop Draft Feasibility Study**—Based on the Planning Guidance Memorandum from the AFB and input from non-Federal sponsors and PDT, the Planning Division will revise the plan formulation for the draft Feasibility Study. The Planning Division will coordinate the PDT to refine details of the recommended plan, cost allocation, and cost-sharing responsibilities, will organize appendixes, and will refine cost estimates and assessments of environmental effects and costs to mitigate for effects. The Planning Division will refine benefits and costs of the alternatives and the comparison of effects. The Planning Division will recommend the best plan based on evaluation criteria, highest net benefits, and environmental protection and then will identify the recommended plan and rationale.

The Planning Division will prepare a draft Feasibility Study, which will include writing, formatting, preparing graphics, preparing appendixes, and distributing the document to the ATR team, CESPD, HQUSACE, and others. The Planning Division will support and cooperate in the ATR review and revision of draft Feasibility Study. The Planning Division will revise the draft Feasibility Study based on comments and responses from the ATR. In conjunction with the PDT, the Planning Division will back check and certify the draft Feasibility Study and will support reproduction of the documents by the sponsors.

- **Prepare and Convene Public Meetings on Draft Feasibility Study**—Along with the rest of the PDT, the Planning Division will prepare for and hold public meetings to receive comments on the draft Feasibility Study approximately 30 days after its release. The Planning Division will coordinate with the non-Federal sponsors and key stakeholders on filing of documents with the EPA, meeting announcements, and the management of comments received. The Planning Division will also coordinate PDT efforts during public review and comment periods.
- **Prepare for and Participate in the CVIFMS Review Conference**—The Planning Division will prepare for and conduct the FRC to discuss issues with the draft Feasibility Study and to recommended actions. The Planning Division will resolve technical and policy issues and will recommend actions to resolve these issues. The Planning Division will coordinate preparation of the post-FRC policy guidance memorandum.
- **Prepare and Process Final Feasibility Study**—The Planning Division will respond to review comments (public agencies and the public) on the draft Feasibility Study, will incorporate responses into the final Feasibility Study, and will refine the recommended plan and documents if needed. The Planning Division will prepare the final Feasibility Study based on policy compliance review comments from the FRC, input from the Federal and non-Federal sponsors, agencies, and the PDT. The Planning Division will finalize the cost allocation and cost-sharing responsibilities and detailed benefits and cost estimates (M-CACES), will assess environmental effects, will identify mitigation commitments, and will refine the NED and recommended plans. The Planning Division will support and cooperate in the ATR and revision of the final Feasibility Study. The Planning Division will revise the final Feasibility Study based on comments and responses from the ATR, will back check and certify the final Feasibility Study, will support reproduction of the report by the sponsors, and will send it to CESPD.
- **Prepare and Support District Engineer's Presentation to Civil Works Review Board**—The Planning Division will develop a presentation to be given by the District Engineer to the Civil Works Review Board (CWRB), including PowerPoint slides and narration, to address the requirements of EC 1105-2-406. Preparations for the CWRB will be coordinated with the project manager, PDT, the sponsor's District Support Team and Regional Integration Team. The Planning Division will participate in briefing the District Engineer before the CWRB meeting. Key members of the Planning Division will participate in the CWRB meeting in person and by teleconference to address the CWRB's questions regarding the feasibility study and report recommendations. The Planning Division will also participate in the preparation of an After Action Report for the CWRB briefing, as required by guidance.

- **Facilitate and Support the Division Engineer’s Transmittal Letter**—The Planning Division will coordinate with CESPDP and will provide the supporting documentation as needed for preparation of the Division Engineer’s transmittal letter for submitting the final feasibility report for Washington-level review. (The transmittal letter replaces the previously required Division Engineer’s Public Notice.) The Planning Division will also prepare a report summary to accompany the transmittal letter, as prescribed by EC 1105-2-405, Division Engineers Submittal of Final Decision Document for Projects Requiring Specific Authorization. The report summary is a concise comprehensive summary of the feasibility study and its recommendations.
- **Support Washington-Level Feasibility Study Processing and Approval**—The Planning Division will coordinate with HQUSACE and CESPDP to address Washington-level review comments on the Feasibility Study, including directing the PDT responses to HQUSACE’s policy compliance review comments, and will revise or amend the final report and supporting documentation as needed. The Planning Division will support the development of the Chief of Engineer’s Report, ASA (Civil Works) Record of Decision, and pertinent documentation and correspondence. This task also includes any possible requirements for additional rewriting, unforeseen technical modifications, reformulation, or documentation as a result of the Washington-level review process, which take place outside of the end of the feasibility phase (i.e., ASA’s submittal of the report to the Office of Management and Budget).

WBS#: JL000, FINAL REPORT DOCUMENTATION

- **Distribute Feasibility Study**—The Planning Division will distribute the FSM, AFB, Draft and Final Feasibility Study to CESPDP, HQUSACE, EPA, State Clearinghouse, and the public, as appropriate. The Planning Division will coordinate the preparation and processing of the public notices (notice of availability, notice of completion, and transmittal letter to the Federal Register) and will file the documents with the EPA.
- **Report Preparation**—The report will be prepared by the Planning Division, in accordance with ER 1105-2-100, Chapter 2, EC 1105-2-206, EC 1105-2-208 and ER 110-2-1150, paragraph 10c. Report preparation includes the compilation of all study team products into draft and final reports for appropriate milestone documents. The work will include reviewing, revising, reproducing, and distributing the draft and final Feasibility Reports, EIS, and related technical documents and appendices to facilitate review and revision.

WBS# JLD00 TECHNICAL REVIEW DOCUMENTS

Tasks to be completed by non-Federal sponsors

- **Review Tasks**—The non-Federal sponsors will complete technical reviews for the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, and where applicable, of tasks accomplished by the USACE.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the Sacramento District of CVFPP documents, work products, and processes as they are developed.

Tasks to be completed by the USACE (lead role)

- **Agency Technical Review**—The quality control objective is to achieve feasibility-level documents and services that meet or exceed non-Federal sponsor requirements and are consistent with the USACE policies and regulations. This work includes all costs associated with the USACE DQC and ATR of study products, including the FSM, AFB, and draft and final reports, to ensure that technical products and processes comply with law, policies, regulations, and sound technical practices of the involved disciplines. The

independent evaluation will focus on if the technical results of the study are reasonable for reaching a decision on whether there is potential for project implementation.

- **Review Guidelines**—The guidelines for review are set forth in the South Pacific Division Quality Management Plan, CESP D R 1110-1-8; EC 1165-2-209 on Civil Works Review Policy, and in the corresponding District Quality Management Plan. All review costs are shared, except for IEPR, which is fully Federally funded.
- **Office of Counsel Review**—The Office of Counsel will be an integral part of the PDT and is responsible for providing timely preventive advice and counsel on all aspects of product delivery. The Office of Counsel will review the draft and final versions of the Real Estate Plan, any EA, EIS, or EIR including any ROD or FONSI, and any issue or white papers sent to Division or HQ. A member of the Office of Counsel will be assigned to the PDT, will attend PDT meetings, will coordinate with PDT members as appropriate, and will be available to the various working groups as needed for legal consultation. The Office of Counsel PDT member will keep appropriate members of the Office of Counsel, including the District Counsel, and Lead Civil Works, Environmental, and Real Estate attorneys informed of significant legal issues confronting the PDT. The Office of Counsel PDT member will also assist the PDT in coordinating reviews of documents with the appropriate attorney in the Office of Counsel.

WBS# JM000 WASHINGTON LEVEL REVIEW AND APPROVAL

This is a Federal task that does not require non-Federal sponsor or USACE (support role) involvement.

Tasks to be completed by the USACE (lead role)

- **Washington Review and Approval**—The USACE will perform this work with input from the sponsors as required. This task involves supporting the copying, distributing, submitting, and processing the Feasibility Study and relevant correspondence through the Washington-level review process. The amount of work required from the CESP D and the sponsors during the Washington-level review is determined by the number and nature of the review comments and cannot be predetermined; therefore, this work item is considered a contingency.

WBS# JPA00 PROJECT MANAGEMENT AND BUDGET

Tasks to be completed by non-Federal sponsors

- The non-Federal sponsors will complete the tasks outlined in Section 4.0 of the CVFMP 2010 Draft PMP as part of the CVIFMS effort, where applicable. Additional tasks will be completed by the non-Federal sponsors, in coordination with the USACE, as described in the following sections.

Tasks to be completed by the USACE (support role)

- **Review of CVFPP Documents and Processes**—This task will involve coordinating technical review by the CESP D of CVFPP documents, work products, and processes as they are developed.
- **Participation in CVFPP Work Sessions and Meetings**—This task will involve coordinating CESP D participation in CVFPP work sessions and meetings providing Federal perspective as needed.
- **EIP Support**—This task will involve coordinating support for EIPs and their associated reimbursement and crediting programs.

Tasks to be completed by the USACE (lead role)

- **Programs and Project Management Documents**—This task will involve typical project management activities. It will include preparation of monthly reports, budget documents, a pre-construction engineering

and design cost-sharing agreement, schedule updates, a project management plan, a final audit, and a sponsor letter of intent. CESPCK-PM-P will complete these tasks with assistance from other CESPCK Divisions, as needed.

- **Project Management**—The project manager will be the primary point of contact with the non-Federal sponsors and will be responsible for the overall execution of the CVIFMS Programmatic Implementation Framework Document and Programmatic Feasibility Study. The project manager will coordinate with the non-Federal sponsors, will attend study team and other meetings as appropriate, will monitor study execution and expenditures, and will update the CESPCK Project Review Board of study progress. In addition, the project manager will identify a strategy for management coordination among the agencies, will determine which groups of experts will be responsible for individual resources, and will identify which studies will be required.

The USACE project management and communication role will include serving as the Federal voice and conduit to the USACE District Support Team/Regional Integration Team/Headquarters on CVFPP information and updates. In addition, the CVIFMS will serve as the informational nexus with CVFPP to the other FRM studies and programs to ensure consistency and coordination. In addition, the USACE will explore the possibility of developing a system for authorization of project funding that may allow more flexibility in matching fund credits for specific/regional projects in the overall program.

- **Monthly Reports Preparation**—The USACE will prepare and update monthly reports.
- **Budget Documents, Financial Reports**—The USACE will prepare monthly funds management reports and other budget documents for use by the project delivery team. This task will require coordination with the program manager to explain expenditures and develop spending schedules.
- **Work-in-Kind Accounting**—The USACE will develop a system for work-in-kind accounting to ensure that there is no double counting for work-in-kind under the CVIFMS and other ongoing feasibility studies within the CESPCK.
- **Project Cooperation Agreement**—A Project Cooperative Agreement will outline the cost sharing obligations for the plans and specifications phase. The draft agreement will be submitted with the draft feasibility report. A revised Project Cooperative Agreement will be submitted to the CESPCK Project Review Board for approval. This task will require close coordination with the project planner and the non-Federal sponsors.
- **Final Audit Preparation**—The USACE will prepare a final audit to ensure that local contributions are at their proper level and to settle any debts or credits.
- **Sponsor Letter of Intent**—The sponsor will review its rights and responsibilities for design and construction phases and will prepare a letter expressing intent to share the cost of design and construction of the selected flood control plan and to operate and maintain the completed project. In the letter, the sponsor will express its understanding of cost share responsibilities regarding design, construction, and operation and maintenance. The program manager will assist the sponsors in this task by providing examples and explaining the role and responsibilities of the non-Federal sponsors.

WBS# JPB00 SUPERVISION AND ADMINISTRATION

Tasks to be completed by non-Federal sponsors

- The non-Federal sponsors will provide supervision and administration and all related oversight for CVFMP activities.

Tasks to be completed by the USACE (support role)

- The USACE does not anticipate the need to provide a support role for CVFMP supervision and administration activities.

Tasks to be completed by the USACE (lead role)

- **Supervision and Administration**—This task will involve supervision and administration and all related oversight for the CVIFMS activities.

WBS# JPC00 CONTINGENCIES

No specific tasks are planned in this WBS; rather, the contingency funds are set aside as a budgetary reserve for unexpected items that cannot be planned at the time this PMP is being prepared.

ENCLOSURE D—QUALITY CERTIFICATION**COMPLETION OF QUALITY CONTROL ACTIVITIES**

The CESPD has completed the project management plan for the CVIFMS. All quality control activities defined in the generic quality control plan have been completed. Compliance with clearly established policy principles and procedures, using justified and valid assumptions, has been verified, including whether the PMP meets the non-Federal sponsors needs and is consistent with law and USACE policy. All issues and concerns resulting from quality review of the PMP have been resolved.

CERTIFICATION

Certification is hereby given that the independent technical review process for this PMP has been completed, that all issues have been addressed, that the streamlining initiatives proposed in this PMP will result in a technically adequate product, and that appropriate quality control plan requirements have been adequately incorporated into this PMP. In summary, the study may proceed into the feasibility phase, in accordance with this PMP.

Date

Alicia Kirchner
Chief, Planning Division

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ENCLOSURE E—LIST OF ACRONYMS

Acronym/Abbreviation	Definition
AFB	Alternative Formulation Briefing
ASA (Civil Works)	Assistant Secretary of the Army for Civil Works
ATR	Agency Technical Review
CEQA	California Environmental Quality Act
CESPD	U.S. Army Corps of Engineers South Pacific Division
CESPK	U.S. Army Corps of Engineers Sacramento District
CESPK-ED-D	Engineering Division—Design Branch
CESPK-ED-E	Engineering Division—Environmental Engineering Branch
CESPK-ED-G	Engineering Division—Geotechnical Engineering Branch
CESPK-ED-H	Engineering Division—Hydraulics and Hydrology Branch
CESPK-ED-S	Engineering Division—Engineering Support Branch
CESPK-PD-R	Planning Division—Environmental Resources Branch
CESPK-PD-W	Planning Division—Water Resources Branch
CESPK-PM-C	Project Management Division—Civil Works Branch
CESPK-RD	Regulatory Division
CESPK-RE	Real Estate Division
Comp Study	Sacramento and San Joaquin River Basins Comprehensive Study
CVFED	Central Valley Floodplain Evaluation and Delineation Program
CVFMP	Central Valley Flood Management Planning Program
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CVIFMS	Central Valley Integrated Flood Management Study
DWR	California Department of Water Resources
EIP	Early Implementation Project
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FCSA	Feasibility Cost Sharing Agreement
Feasibility Study	CVIFMS Programmatic Feasibility Study
FEMA	Federal Emergency Management Agency
Framework Document	CVIFMS Framework Document Companion to CVFPP 2012 Document
FRC	Feasibility Review Conference
FRM	Flood Risk Management
GIS	Geographical Information System
HQUSACE	Headquarters, US Army Corps of Engineers
HTRW	Hazardous, Toxic and Radioactive Waste
IEPR	Independent External Peer Review
LiDAR	light detection and ranging
M-CACES	Micro-Computer Aided Cost Estimating System
NED	National Economic Development
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NER	National Ecosystem Restoration
PAC	Post Authorization Change
PDT	Project Delivery Team
PED	Preconstruction Engineering And Design
PMP	Project Management Plan
SPFC	State Plan of Flood Control
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
WBS	Work Breakdown Structure

ENCLOSURE F—REVIEW PLAN

A Review Plan has been developed for the CVIFMS project. For completeness, the plan is provided on the following pages.

REVIEW PLAN

**CENTRAL VALLEY INTEGRATED
FLOOD MANAGEMENT STUDY
CALIFORNIA**

**PROGRAMMATIC IMPLEMENTATION
FRAMEWORK DOCUMENT
and
PROGRAMMATIC FEASIBILITY STUDY**

SACRAMENTO DISTRICT

June 2011

**MSC Approval Date: Pending
Last Revision Date: None**



**US Army Corps
of Engineers®**

REVIEW PLAN

CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY
Central Valley, California
Framework and Programmatic Feasibility Study

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the Central Valley Integrated Flood Management Study (CVIFMS), Central Valley, California. The study includes a programmatic framework document (Framework Document), scheduled for completion in 2012, and a programmatic feasibility study (Feasibility Study) **decision document** and combined Environmental Impact Statement/Environmental Impact Report (EIS/EIR), scheduled for completion in 2017.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) EC 1105-2-412, Assuring Quality of Planning Models, xxx 2010
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) CVIFMS Project Management Plan, April 2011

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for civil works products by providing a seamless process for review of all civil works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation. The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, **decision documents** are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

- (1) District Quality Control/Quality Assurance (DQC). All **decision documents** (including supporting data, analyses, and environmental compliance documents) will undergo DQC. This is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home Major Subordinate Command (MSC). The home district will manage DQC.
- (2) Agency Technical Review (ATR). ATR is mandatory for all **decision documents**, including supporting data, analyses, and environmental compliance documents. The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published US Army Corps of Engineers (USACE) guidance and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within the USACE by a designated Risk Management Organization (RMO) and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be composed of senior USACE personnel and may be supplemented by outside experts, as appropriate. To ensure independence, the leader of the ATR team will be from outside the home MSC.
- (3) Independent External Peer Review (IEPR). An IEPR may be required for **decision documents** under certain circumstances. IEPR is the most independent level of review and is applied in cases that meet certain criteria, where the risk and magnitude of the proposed

project are such that a critical examination by a qualified team outside the USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent recognized experts from outside the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR: Type I is generally for **decision documents** and Type II is generally for implementation products.

- (a) Type I IEPR. Type I IEPRs are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, alternative plan formulation, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPRs cover the entire **decision document** or action and address all the underlying engineering, economics, and environmental work, not just one aspect of the study. For **decision documents** where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance will also be addressed during the Type I IEPR, per EC 1165-2-209.
 - (b) Type II IEPR. Type II IEPR, or Safety Assurance Review, are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will review the design and construction activities before construction begins and, until construction is completed, periodically thereafter on a regular schedule. The reviews will consider the adequacy, appropriateness, and acceptability of the design and construction activities in ensuring public health safety and welfare. Type II IEPR will not apply to the CVIFMS.
- (4) Policy and Legal Compliance Review. All **decision documents** will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy and warrant approval or further recommendation to higher authority by the Chief of Engineers. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in **decision documents**.
 - (5) Cost Engineering Review and Certification. All **decision documents** will be coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District. The DX, or in some circumstances regional cost personnel that are pre-certified by the DX, will conduct the cost ATR. The DX will certify the final total project cost.
 - (6) Model Certification/Approval. EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, that they are compliant with USACE policy and computationally accurate, and that they are based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives, and to support decision making. The use of a certified/approved planning model does not constitute

technical review of the planning product. The selection and application of the model and the input and output data are still the responsibility of the users and are subject to DQC, ATR, and IEPR. EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE-developed and commercial engineering software will continue, and the professional practice of documenting the application of the software and modeling results will be followed. Use of engineering models is also subject to DQC, ATR, and IEPR.

2. REVIEW MANAGEMENT ORGANIZATION COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for **decision documents** is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the **decision document**. The RMO for the peer review effort described in this Review Plan is the Flood Risk Management PCX.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to conduct ATR of cost estimates, construction schedules, and contingencies. In addition, RMO will coordinate with the Ecosystem Restoration PCX and the Risk Management Center to ensure that review teams with appropriate expertise are assembled.

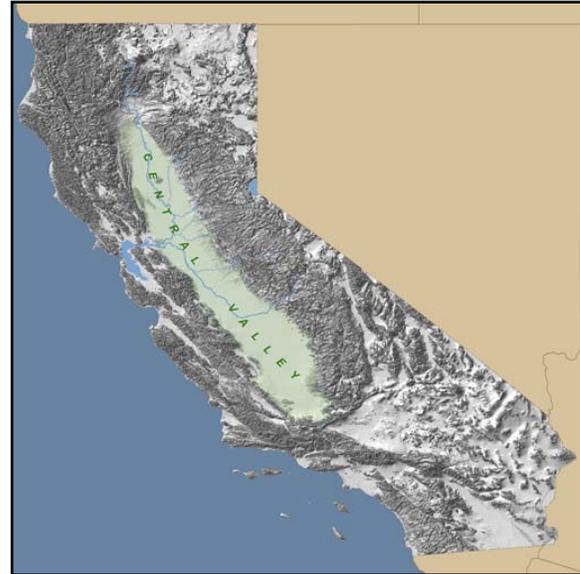
3. STUDY INFORMATION

- a. **Decision Document.** The purpose of the study is to identify flood risk management measures in the study area. The **decision document**, which is the Feasibility Study, a programmatic report, is expected to be the basis for a recommendation to Congress for authorizing new management or protection measures. The Feasibility Study will present planning, engineering, and implementation details of the recommended plan and may include project-specific design and construction components. The feasibility phase of this project will be cost shared, 50 percent Federal and 50 percent non-Federal, with the project sponsors. The sponsors are the California Department of Water Resources (DWR) and the California Central Valley Flood Protection Board (CVFPB). These agencies are herein referred to as non-Federal sponsors.
- b. **Study/Project Description.** In 2007, the California Legislature passed five interrelated bills aimed at addressing the problems of flood protection and liability: Senate Bill (SB) 5, SB 17, Assembly Bill (AB) 5, AB 70, and AB 156. SB 5 directed the DWR to develop and the CVFPB to adopt a Central Valley Flood Protection Plan (CVFPP), one of the objectives of which is to provide a vision for future flood management in the Central Valley. Due to the interests of the CVFPB, DWR, and the USACE in existing and future Federal/State water resource projects and programs in the Central Valley, the non-Federal sponsors have requested USACE assistance in developing the CVFPP. The intent is to build off the Sacramento River and San Joaquin River Basins Comprehensive Study (Comp Study) and other existing studies to develop the 2012 and subsequent CVFPP documents. The non-Federal sponsors and the USACE are developing PMPs and a new Federal Cost Share Agreement (FCSA) to prepare an integrated watershed study of the Central Valley (CVIFMS) that will support preparation of the CVFPP. The total estimated project cost is \$118,000,000, of which 50 percent will be Federal and 50 percent will be non-Federal in-kind.

The purpose and intent of the CVIFMS is to provide Federal support for the CVFPP vision of improved flood risk management in the Central Valley. As with the CVFPP effort, the CVIFMS will build upon the tools and recommendations that were developed during the Comp Study. The CVIFMS team, in developing the PMP and associated documents, will synchronize with the CVFPP process to stress efficiency, coordination, and communication. The CVIFMS will focus on flood risk

management and ecosystem restoration measures and alternatives that will be within the Federal interest and consistent with USACE guidelines and policies. It will provide parallel technical and policy support to the CVFPP study. In addition, the CVIFMS will include investigations of, and, potentially, recommendations for Federal actions that the USACE could pursue through design and construction, given concurrent local sponsor interest. USACE participation will include support, communication, and lead roles in completing various technical tasks.

The study is being conducted in the Central Valley of California within the watershed boundaries of the Sacramento and San Joaquin Rivers. For planning and analysis purposes, and consistent with legislative direction of the non-Federal sponsors, two geographical planning areas are important for the CVIFMS consideration in Federal/State participation, as follows:



- **State Plan of Flood Control Planning Area.**

This area is defined by the lands currently receiving protection from facilities of the State Plan of Flood Control. The State's flood management responsibility is limited to this area.

- **System-Wide Planning Area.** This area includes the lands that are subject to flooding under the current facilities and operation of the Sacramento-San Joaquin River Flood Management System (Water Code Section 9611). The State Plan of Flood Control Planning Area is completely contained within the system-wide planning area.

c. **Factors Affecting the Scope and Level of Review.** Quality control will be reviewed through DQC, ATR, Type I IEPR, and Policy and Legal Compliance Review. The Framework Document is an informational document that will only require DQC and ATR. Questions that must be considered in determining the scope and level of review for the Feasibility Study are identified in column 1 of Table 1; the Project Delivery Team's (PDT's) assessment of these questions in relation to this study is listed in column 2 of Table 1.

d. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsors are planning and engineering services for flood management and protection through the State's CVFMP Program. All in-kind technical work will be reviewed by ATR for compliance with the USACE criteria and guidelines.

The following categories of in-kind contributions are expected to be completed under the State's CVFMP Program:

- Floodplain surveys and mapping;
- Hydrologic and hydraulic engineering investigations, including flood routing computer modeling;
- Geotechnical investigations, particularly related to levee stability and design;
- Data management; and
- Watershed investigations.

Table 1. Factors Affecting Scope and Level of Review for the Feasibility Study

Questions to Determine Scope	CVIFMS Program
Will parts of the study be challenging?	Developing an integrated approach for improved flood management and protection in the Central Valley is considered challenging from both a technical and implementation perspective and from a public and social perspective.
Will the Feasibility Study contain influential scientific information or be a highly influential scientific assessment?	It is not anticipated that the study will include influential scientific information, although it may include extensive hydraulic and hydrologic data management and modeling.
Will the study have significant economic environmental or social effects on the nation?	The study may have significant economic and environmental effects. An environmental impact analysis will be conducted as part of the study.
Will the study have significant interagency interest?	The study has local, State, and Federal interest; thus, a variety of agencies will be included as part of the coordination process.
Will the alternatives have a significant threat on human life and safety?	The goal of the study is improved flood risk management and flood protection; thus, the alternatives are expected to reduce threats to life and improve public safety.
Will the study be highly controversial?	The project has a potential for public controversy.
Will the information in the decision document be based on novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?	It is not likely that the study will result in precedent-setting methods or models. However, it is possible that legislative or rule changes could be recommended that could affect operational practices of reservoirs or other water storage or conveyance facilities.
What are the likely study risks and the magnitude of the risks?	<p>Technical in-kind contributions. The non-Federal sponsors will be completing a number of technical analyses for this study. There is a risk that their Federal work may not meet USACE requirements, that they will require modification, and thus that they will result in cost and schedule risks. These risks will be mitigated through in-progress communication and coordination with the non-Federal sponsors.</p> <p>Public controversy. The study has the potential for public controversy, which will be mitigated through a carefully planned and implemented public involvement program.</p>

4. DISTRICT QUALITY CONTROL (DQC)

- a. **Documentation of DQC.** DQC of all District study efforts and products including A/E contract work will be performed as per respective section QC/QA procedures and documentation. A DQC lead will be designated to track and coordinate documents and certification.
- b. **Products to Undergo DQC.** The study products to undergo DQC include the Framework Document scheduled for completion in 2012 and the Feasibility Study **decision document** and combined EIS/EIR scheduled for completion in 2017.

5. AGENCY TECHNICAL REVIEW

a. **Products to Undergo ATR.** The products to undergo ATR for the study will include:

- Framework Document
- In-kind technical contributions from non-Federal sponsors;
- Without-project hydrology (USACE South Pacific Division (SPD) requirement);
- Feasibility scoping meeting documentation;
- Alternative Review Conference documentation (SPD requirement);
- Alternative Formulation Briefing (AFB) documentation;
- Draft Feasibility Study, including NEPA/CEQA environmental compliance documentation and technical appendices; and
- Final Feasibility Study, including NEPA/CEQA environmental compliance documentation and technical appendices.

The FSM and AFB materials and supporting analyses warrant ATR because they provide the basis for Headquarters, USACE (HQUSACE) to determine if there is Washington-level agreement with the future without-project condition and if support for the CVIFMS alternatives will be warranted. The feasibility scoping meeting and AFB submittal materials, draft Feasibility Study, and supporting materials merit ATR because they will be released to the public for review and will determine the public, stakeholder, State, other agency, and other interest group positions on the CVIFMS alternatives. The final Feasibility Study and supporting analyses warrant ATR because they will provide the basis for the Chief of Engineers interagency coordination and the Chiefs' approval or further recommendation to the Secretary of the Army and the Congress, as needed.

ATR members will be provided with any significant public comments made during public meetings and on the products under review. Each application of ATR should build upon any and all prior cycles of review for the study. Each ATR review iteration need address only incremental changes and additions to documents and analyses addressed in prior ATR reviews, unless the ATR team determines that certain subjects or aspects warrant revisiting due to other changes or a need to adequately understand a larger portion of the project.

b. **Required ATR Team Expertise.** The ATR team will be established shortly after the FCSA is executed. The team will be composed of individuals from outside the home district who have not been involved in the development of the **decision document** and will be chosen based on expertise, experience, and skills. It is anticipated that the team will consist of at least 13 reviewers. The following types of expertise may be represented on the ATR team:

- **Planning**—Team members will be experienced with the civil works process, watershed level projects, and current flood damage reduction planning and policy guidance. Team members will have experience in plan formulation for multipurpose projects and planning in a collaborative environment.

- Surveying, Mapping, and Data Management—Team member will have expertise in the evaluation of survey data, mapping, and geo-spatial data management and analysis. Team member will have familiarity with mapping in California’s Central Valley.
- Hydrology—Team members will be experienced in the field of rainfall runoff models, flow-frequency analysis, hydrologic effects of flood control operations, and hydrologic analysis using the Hydrologic Modeling System 3.4. Team members will have familiarity with flood control challenges in California’s Central Valley.
- Hydraulics—Team member will be experienced in the field of hydraulics and will have a thorough understanding of open channel dynamics, channel systems, detention/retention basins, application of levees and flood walls, sediment transport, computer modeling techniques such as HEC-RAS and FLO-2D, and non-structural solutions involving flood warning systems and flood proofing.
- Floodplain and Sedimentation Studies—Team member or members will have expertise in floodplain studies, including mapping of overflows of various frequencies and in conducting sedimentation studies. Team member will have familiarity with floodplain and sedimentation issues in California’s Central Valley.
- Geotechnical Engineering—Team member will have experience in geotechnical evaluation of flood risk management structures, such as static and dynamic slope stability evaluation; evaluation of the, seepage through earthen embankments; evaluation, and under-seepage through the foundation of flood risk management structures.
- Engineering and Design Analysis—Team member will have expertise in structural components of flood management; typical issues may include utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood damage reduction.
- Economics—Team member will have expertise in the processes used in evaluating flood risk management, ecosystem restoration and recreation projects. Team member will have recent experience in preparing economic analysis plans for multipurpose feasibility, including all four project accounts: National Economic Development (NED), Environmental Quality (EQ), Regional Economic Development (RED), and Other Social Effects (OSE).
- Real Estate Studies—Team members will have experience with the USACE’s process of valuating real estate costs associated with acquiring the project’s real property.
- Environmental Studies —Team member(s) will have expertise in the habitat types found in California’s Central Valley, will understand the factors that influence the reestablishment of native species of plants and animals, will have expertise in the requirements for NEPA/CEQA documentation, and will be experienced in the cultural resource discipline and other environmental areas, such as air quality, as they relate to programmatic planning studies.
- Hazardous, Toxic, and Radiological Waste (HTRW)—Team member will have expertise in assessing HTRW to determine the nature and extent of HTRW materials within the project area.

- Regulatory - —Team member will have experience in wetland delineation and regulatory permitting with knowledge of wetlands in the Central Valley that may be affected by the CVIFMS alternatives and will be evaluated for Section 404 requirements and State and local laws.
- Cost Engineering—Team member will have USACE expertise in the application of scientific principles and techniques to problems of cost estimating, cost control, business planning and management science, profitability analysis, project management, and planning and scheduling.

The PCX, in cooperation with the PDT and vertical team (the vertical team is the district, RMO, MSC, and HQUSACE), will determine the final makeup of the ATR team. It is not anticipated that the public, including scientific or professional societies, will be asked to nominate potential ATR members. The name, organization, contact information, credentials, and years of experience of each member will be identified at the time the review is conducted.

- c. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include the following:

- The review concern—Identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- The basis for the concern—Cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- The significance of the concern—Indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- The probable specific action needed to resolve the concern—Identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, commenters may seek clarification in order to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination, and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution, in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and will accomplish the following:

- Identify the document(s) reviewed and the purpose of the review;

- Disclose the names of the reviewers and their organizational affiliations and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize any unresolved issue; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a statement of technical review, certifying that the issues raised by the ATR team have been resolved or elevated to the vertical team. A statement of technical review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample statement of technical review is included in Attachment 2.

6. TYPE I INDEPENDENT EXTERNAL PEER REVIEW

- a. Decision on IEPR.** Type I IEPR is conducted for **decision documents** if there is a vertical team decision involving the district (MSC, PCX, and HQUSACE members) that the covered subject matter meets certain criteria (described in EC 11 65-2-209), where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. Type I IEPR is coordinated by the appropriate PCX and managed by an outside eligible organization (OEO), external to the USACE. Type I IEPR panels will evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning study. Type I IEPR panels will accomplish a concurrent review that covers the entire **decision document** and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document will make the draft **decision document** available to the public for comment at the same time it is submitted for review (or during the review process) and will sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. A Type I IEPR panel or OEO representative will participate in the Civil Works Review Board.

The decision to conduct Type I IEPR is made by comparing EC 1165-2-209 criteria to the study, as shown in Table 2. Based on these factors, Type I IEPR will be conducted.

- b. Products to Undergo Type I IEPR.** The Type I IEPR will be performed for the draft Feasibility Study, including NEPA/CEQA environmental compliance documentation and technical appendices. Type I IEPR panel members will be provided with ATR documentation and significant public comments made during public meetings and on the products under review.
- c. Required Type I IEPR Panel Expertise.** The Type 1 IEPR panel members will be composed of individuals who have not been involved in the development of the **decision document** and will be chosen based on expertise, experience, and skills. It is anticipated that the team will consist of approximately seven reviewers.

Table 2. Decision on Type I IEPR

EC 1165-2-209 Criteria	CVIFMS Program
Is there significant threat to human life?	The goal of the study is improved flood risk management and flood protection; thus, the alternatives are expected to reduce threats to life and improve public safety.
Is the total project cost more than \$45 million?	The cost to implement the CVIFMS alternatives will likely be more than \$45 million.
Has the Governor of California requested a Type I IEPR?	The Governor has not requested a Type I IEPR.
Has the head of a Federal or State agency charged with reviewing the project study requested a Type I IEPR?	No requests have been received for a Type I IEPR for this study.
Will the alternatives be a significant threat to human life and safety?	The goal of the study is improved flood risk management and flood protection; thus, the alternatives are expected to reduce threats to life and improvement to public safety.
Will there be significant public controversy as to the size, nature, or effects of the project?	The project has the potential for public controversy.
Will there be significant public controversy as to the economic or environmental cost or benefit of the project?	The project has the potential for public controversy.
Will the study be based on information from novel methods, present complex challenges or interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices?	The integrated approach of the CVIFMS and CVFPP working together to improve flood management may be considered novel.

d. The following types of expertise may be represented on the Type I IEPR team:

- Hydrology and Hydraulics—Panel member will be an expert in the field of hydrology and hydraulics and will have a thorough understanding of rainfall runoff models, flow-frequency analysis, hydrologic effects of flood control operations, open channel dynamics, detention/retention basins and bypass channels, application of levees and flood walls, and nonstructural solutions.
- Economics—Panel member will have extensive experience with the processes used in evaluating flood risk management ecosystem restoration and recreation projects. Team members will have recent experience in preparing economic analysis plans for multipurpose feasibility including all four project accounts: NED, EQ, RED, and OSE.
- Environmental Resources—Panel member will have expertise in the habitat types found in California’s Central Valley, understand the factors that influence the reestablishment of native species of plants and animals, be experienced in the preparation of NEPA/CEQA documentation, and have expertise in the cultural resources discipline.
- Cost Engineering—Panel member will have extensive USACE experience in applying scientific principles and techniques to problems of cost estimating, cost control, business planning and management science, profitability analysis, project management, planning and scheduling.

- Civil Design—Panel member will have expertise in designing flood protection measures, including levees, channels, and retention structures, as well as application of nonstructural flood damage reduction.
- Geotechnical Engineering—Panel member will have extensive experience in geotechnical evaluation of flood risk management structures, such as static and dynamic slope stability evaluation, seepage through earthen embankments evaluation, and under-seepage through the foundation of flood risk management structures.
- HTRW—Panel member will have expertise in assessment of HTRW to determine the nature and extent of HTRW materials within the project area.

The OEO will determine the final participants on the Type I IEPR panel. The name, organization, contact information, credentials, and years of experience of each member will be identified at the time the review is conducted and will be included in Attachment 1 of this Review Plan.

- e. **Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an OEO, per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final **decision document** and will:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The OEO will submit the final Review Report no later than 60 days following the close of the public comment period for the draft **decision document**. The USACE will consider all recommendations contained in the Review Report and will prepare a written response for all recommendations adopted or not adopted. The final **decision document** will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the Internet.

The OEO will prepare the final Review Report after reviewing the complete **decision document** package. If IEPR of interim products are performed, these reviews will be documented in interim Review Reports, which will be incorporated into the final Review Report. The official USACE response to the IEPR panel recommendations will be provided in the final Review Report only. Initial responses to IEPR panel recommendations will be developed and documented by the PDT and provided to the vertical team for consideration in developing the official USACE response. The use of DrChecks to document the IEPR comments and initial District responses is not required, but its use may be negotiated with the OEO.

7. MODEL CERTIFICATION AND APPROVAL

- a. Planning Models.** The Hydrologic Engineering Center's Flood Damage Reduction Analysis program (HEC-FDA 1.2.4 (Certified)) provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using a risk-based analysis method. It is anticipated that the program will be used to evaluate and compare the future with- and without-project plans for the CVIFMS alternatives to aid in the selection of a recommended plan to manage flood risk. As the study progresses, other models may be added, and some may require custom modifications to address the CVIFMS and CVFPP differences. The PDT will coordinate all certification with the Flood Risk Management (FRM) PCX.
- b. Engineering Models.** The following engineering models are anticipated to be used in the development of the **decision document**. Some may require custom modifications to address the CVIFMS and CVFPP differences:
- The Hydrologic Modeling System HEC-HMS 3.4 is designed to simulate the precipitation runoff processes of dendritic watershed systems. It is designed to be applicable in geographic areas for solving the widest possible range of problems. This includes large river basin water supply, flood hydrology, and small urban or natural watershed runoff. Hydrographs produced by the program are used directly or in conjunction with other software for studies of water availability, urban drainage, flow forecasting, future urbanization impact, reservoir spillway design, flood damage reduction, floodplain regulation, and systems operation. It is expected that this software program will be used to create inflow hydrographs for development for with- and without-project conditions.
 - Hydrologic Engineering Center's River Analysis System HEC-RAS 4.0 provides one-dimensional steady and unsteady flow river hydraulics calculations, sediment transport-mobile bed modeling, and water temperature analysis. The software supersedes the HEC-2 river hydraulics package, which was a one-dimensional, steady flow water surface profile program. This software program will create water surface profile elevations for with- and without-project conditions.
 - FLO-2D is a volume conservation flood routing model used to simulate river overbank flows. It can also be used on unconventional flooding problems, such as unconfined flows over complex alluvial fan topography and roughness, split channel flows, mud/debris flows, and urban flooding. This software program will be used to develop economic floodplains for the benefits analysis for with- and without-project conditions.
 - ArcMap is the main component of ESRI's ArcGIS suite of geospatial processing programs, and it is used primarily to view, edit, create, and analyze geospatial data. ArcMap allows users to explore data within a data set, to symbolize features accordingly, and to create maps. ArcMap 9.3/HEC-GeoRAS 4.1.1 is a set of procedures, tools, and utilities for processing geospatial data in ArcGIS/ArcMap using a graphical user interface. The interface allows the preparation of geometric data for import into HEC-RAS and processes simulation results exported from HEC-RAS.
 - HEC-6 is a one-dimensional, movable boundary, open channel flow, numerical model designed to simulate and predict changes in river profiles from scour and deposition over moderate periods (typically years, although applications to single flood events are possible). A continuous flow record is partitioned into a series of steady flows of variable discharges

and durations. For each flow a water surface profile is calculated, thereby providing energy slope, velocity, and depth at each cross section. Potential sediment transport rates are then computed at each section. These rates, combined with the duration of the flow, permit a volumetric accounting of sediment within each reach. The amount of scour or deposition at each section is then computed and the cross section is adjusted accordingly. The computations then proceed to the next flow in the sequence and the cycle is repeated, beginning with the updated geometry. The sediment calculations are performed by grain size fraction, thereby allowing the simulation of hydraulic sorting and armoring. Features of HEC-6 include capability to analyze networks of streams, channel dredging, and various levee and encroachment alternatives. HEC-6 uses several methods for computing sediment transport.

- HEC-RAS 4.1 for sediment transport incorporates the simulation of one-dimensional sediment transport/movable boundary calculations resulting from scour and deposition over moderate periods (typically years, although applications to single flood events are possible). The sediment transport potential is computed by grain size fraction, thereby allowing the simulation of hydraulic sorting and armoring. Major features include the ability to model a full network of streams, channel dredging, and various levee and encroachment alternatives. HEC-RAS 4.1 uses several different equations to compute sediment transport. The model is designed to simulate long-term trends of scour and deposition in a stream channel that might result from modifying the frequency and duration of the water discharge and stage or modifying the channel geometry. This system can be used to evaluate deposition in reservoirs, to design channel contractions required to maintain navigation depths, to predict the influence of dredging on the rate of deposition, to estimate maximum possible scour during large floods, and to evaluate sedimentation in fixed channels.
- Several environmental and ecological models have been used in the Central Valley and may be used to support the CVFPP and CVIFMS. For example, models are used to evaluate effects on various aquatic species from changes in temperature, turbidity, and other water quality parameters. These models typically involve hydrodynamic flow calculations, coupled with computations of water quality and other ecological variables that are important to aquatic species. In addition, models may be used to assess air quality and noise effects.

8. REVIEW SCHEDULES AND COSTS

- a. **DQC Schedule and Cost.** The DQC schedule is shown in Table 3.

Table 3. DCQ Schedule

Task	Date
DQC team identified.	TBD
Draft report, including NEPA/environmental compliance documentation and technical appendices.	TBD
Draft report, including NEPA/environmental compliance documentation and technical appendices.	TBD

The USACE Sacramento District will provide labor funding by cross charge labor codes. The Project Manager will work with the DQC team leader to ensure that adequate funding is available and is commensurate with the level of review needed. Any funding shortages will be negotiated on a case-by-case basis and in advance of a negative charge occurring.

The DQC team leader will provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creating labor codes. Reviewers will monitor individual labor code balances and will alert the DQC team leader of any possible funding shortages. DQC review is estimated to be \$40,000 for the Framework Document and \$100,000 for the Feasibility Study.

- b. ATR Schedule and Cost.** The ATR schedule is shown in Table 4. Additional detail will be added to this schedule when the time for the first review draws closer. It is not anticipated that any review will be needed before 2012. All products for these milestones will be reviewed, including those produced as in-kind services by the non-Federal sponsors.

Table 4. ATR Schedule

Task	Date	
	Framework Document	Feasibility Study
Prepare ATR scope of work.	TBD	TBD
Award contract.	TBD	TBD
Identify ATR team.	TBD	TBD
Initiate review.	TBD	TBD
ATR review of in-kind technical work.	TBD	TBD
ATR review of without project hydrology.	TBD	TBD
ATR feasibility scoping meeting documentation.	TBD	TBD
ATR alternatives review conference documentation.	TBD	TBD
ATR alternatives formulation briefing documentation.	TBD	TBD
ATR review of draft report, including NEPA/environmental compliance documentation and technical appendices.	TBD	TBD
ATR review of final report, including NEPA/environmental compliance documentation and technical appendices.	TBD	TBD
Respond to ATR comments.	TBD	TBD

The USACE Sacramento District will provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided through government order. The Project Manager will work with the ATR team leader to ensure that adequate funding is available and is commensurate with the level of review needed. Any funding shortages will be negotiated on a case-by-case basis and in advance of a negative charge occurring.

The ATR team leader will provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creating labor codes. Reviewers will monitor individual labor code balances and will alert the ATR team leader to any possible funding shortages. ATR review is estimated to be \$60,000 for the Framework Document and \$300,000 for the Feasibility Study.

- c. Type 1 IEPR Schedule and Cost.** The schedule for Type I IEPR will be determined as the time for review draws closer. The IEPR panel will be engaged early in the study to reduce the chances of significant changes to the study occurring at the end due to IEPR findings. Interim products for hydrology, hydraulics, geotechnical design, and economics will be provided to the panel before the draft report is released for public review. The full Type I IEPR panel will receive the entire Feasibility Study, including environmental impact documentation and all technical appendices, concurrent with public and agency review. The final report to be submitted by the Type I IEPR panel must be submitted to the PDT within 60 days of conclusion of public review. The schedule is shown in Table 5.

Table 5. Type 1 IEPR Schedule

Task	Date
Prepare scope of work.	TBD
Award contract.	TBD
Identify IEPR team.	TBD
Initiate review.	TBD
IEPR briefing meeting.	TBD
IEPR review of draft report, including NEPA/environmental compliance documentation and technical appendices.	TBD
IEPR review of final report, including NEPA/environmental compliance documentation and technical appendices.	TBD
Respond to IEPR comments.	TBD

The Type 1 IEPR is estimated to be \$500,000.

- d. Model Certification/Approval Schedule and Cost.** No model certification is anticipated. If other planning models are added during the study, the PDT will coordinate model certification/approval with the FRM PCX.

9. PUBLIC PARTICIPATION

An extensive public participation program is planned, the details of which are specified in the Communications Plan. As part of this process, significant and relevant public comments will be provided to reviewers before they conduct their review. The final **decision document**, associated Review Reports, and USACE responses to IEPR comments (if applicable) will be made available to the public, as indicated in the Communication Plan.

10. REVIEW PLAN APPROVAL AND UPDATES

The USACE SPD Commander is responsible for approving this review plan. The Commander's approval reflects vertical team input (involving USACE, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the **decision document**. Like the PMP, the review plan is a living document and may change as the study progresses. The home district is responsible for keeping the review plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the review plan, such as those to the scope and level of review, should be reapproved by the MSC Commander following the process used for initially approving the plan. The latest version of the review plan, along with the Commanders' approval memorandum, should be posted on the home district's website. The latest review plan should also be provided to the RMO and home MSC.

11. REVIEW PLAN POINTS OF CONTACT

Public questions and comments on this review plan can be directed to the following points of contact:

- Shelley McGinnis, (916) 557-5159, at the USACE Sacramento District;
- Karen Berresford, (415) 503-6557, at the home MSC; and
- Caleb Conn, FRM-PCX SPD Manager, (415) 503-6849, at the RMO.

ATTACHMENT 1: TEAM ROSTERS

Table 6 through 11 include rosters and contact information for the current PDT, DQC team, vertical team, ATR team, Type I and PCX points of contact.

Table 6. Project Delivery Team

Name	Discipline	Phone (all are Area Code 916)
Bartlett, Joseph	DWR Representative	574-2395
Bedker, Gary	Economics	574-6707
TBD	Hydraulic Design	
Condon, Deborah	DWR Representative	574-1426
Edwards, Doug	Environmental Planning	557-7026
Finan, Mike	Regulatory	557-5324
Fujitsubo, Miki	Regional Technical Specialist	557-7440
Gray-Garcia, Chris	PAO/Communications	557-5101
Guevin, Bryan	Cultural Resources	557-7378
Hansberry, Alarice	Office of Counsel	
Holmstrom, Steve	Hydrology	557-7129
Karvonen, Tom	Project Manager	557-7630
McGinnis, Shelley	Lead Planner	557-5159
Motoike, Steve	GIS	557-7042
Perlea, Mary	Geotechnical Engineering	557-7185
TBD	Engineering	557-6618
Williams, Christopher	CVFPB Representative	574-2511
Zianno, Paul	Real Estate Studies	557-6993

Table 7. District Quality Control Team

Name	Discipline	Phone
TBD	Lead DQC	TBD
TBD	Planning	TBD
TBD	Surveying, Mapping, and Data Management	TBD
TBD	Hydrology	TBD
TBD	Hydraulics	TBD
TBD	Floodplain and Sedimentation Studies	TBD
TBD	Geotechnical Engineering	TBD
TBD	Engineering Design and Analysis	TBD
TBD	Economics	TBD
TBD	Real Estate Studies	TBD
TBD	Environmental Studies	TBD
TBD	Cultural Resources	TBD
TBD	HTRW	TBD
TBD	Regulatory	TBD
TBD	Cost Engineering	TBD

Table 8. Vertical Team

Name	Discipline	Phone (all are Area Code 415)
Berresford, Karen	District Lead	503-6557
Skaggs, Leigh	Planning	503-6588
Kennedy, Nedenia	Environmental	503-6585

Gillespie, Mary	Real Estate	503-6553
Kuz, Annette	Office of Counsel	503-6633
McAllister, Victoria	Public Affairs Office	503-6514
Sing, Edward	Quality Management	503-6533
Bartha, James	Contracting	503-6548

Table 9. Agency Technical Review Team

Name	Discipline	Phone
TBD	ATR Team Leader	TBD
TBD	Planning	TBD
TBD	Surveying, Mapping, and Data Management	TBD
TBD	Hydrology	TBD
TBD	Hydraulics	TBD
TBD	Floodplain and Sedimentation Studies	TBD
TBD	Geotechnical Engineering	TBD
TBD	Engineering Design and Analysis	TBD
TBD	Economics	TBD
TBD	Real Estate Studies	TBD
TBD	Environmental Studies	TBD
TBD	Cultural Resources	TBD
TBD	HTRW	TBD
TBD	Regulatory	TBD
TBD	Cost Engineering	TBD

Table 10. Type I Independent External Peer Review Panel

Name	Discipline	Phone
TBD	Hydrology and Hydraulics	TBD
TBD	Economics	TBD
TBD	Environmental Resources	TBD
TBD	Cost Engineering	TBD
TBD	Civil Design	TBD
TBD	Geotechnical Engineering	TBD
TBD	HTRW	TBD

Table 11. Planning Center of Expertise Points of Contact

Name	Discipline	Phone
Thaut, Eric	Program Manager, PCX Flood Risk Management	(415) 503-6852
Snortland, Nathan	Risk Management Center	(571) 232-9189
Staebell, Jodie	Operational Director, PCX Ecosystem Restoration	(309) 794-5448
Jacobs, Michael	Cost Engineering Directory of Expertise	(509) 527-7516

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the report for the Central Valley Integrated Flood Management Study. The ATR was conducted as defined in the project's review plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Name

Project Manager

Office Symbol

Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

Name

Chief, Engineering Division

Office Symbol

Date

SIGNATURE

Name

Chief, Planning Division

Office Symbol

Date

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page/Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	IEPR	Independent External Peer Review
ATR	Agency Technical Review	MSC	Major Subordinate Command
CEQA	California Environmental Quality Act	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
CVFMP	Central Valley Flood Management Planning	OMB	Office of Management and Budget
CVFPB	California Central Valley Flood Protection Board	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
CVFPP	Central Valley Flood Protection Plan	OEO	Outside Eligible Organization
CVIFMS	Central Valley Integrated Flood Management Study	OSE	Other Social Effects
DPR	Detailed Project Report	PCX	Planning Center of Expertise
DQC	District Quality Control/Quality Assurance	PDT	Project Delivery Team
DWR	California Department of Water Resources	PAC	Post Authorization Change
DX	Directory of Expertise		
EA	Environmental Assessment	PMP	Project Management Plan
EC	Engineer Circular	PL	Public Law
EIR	Environmental Impact Report	QMP	Quality Management Plan
EIS	Environmental Impact Statement	QA	Quality Assurance
EO	Executive Order	QC	Quality Control
ER	Ecosystem Restoration	RED	Regional Economic Development
FDR	Flood Damage Reduction	RMC	Risk Management Center
FCSA	Federal Cost Share Agreement	RMO	Review Management Organization
FEMA	Federal Emergency Management Agency	RTS	Regional Technical Specialist
FRM	Flood Risk Management	SAR	Safety Assurance Review
FSM	Feasibility Scoping Meeting	SPD	South Pacific Division
GRR	General Reevaluation Report	USACE	U.S. Army Corps of Engineers
HQUSACE	Headquarters, U.S. Army Corps of Engineers	WRDA	Water Resources Development Act

ENCLOSURE G—COMMUNICATION PLAN

1. INTRODUCTION/PURPOSE

The USACE Sacramento District is responsible for implementing the CVIFMS Feasibility Study, in conjunction with the CVFPP being conducted by the non-Federal cost-share partners. The non-Federal sponsors are the DWR and the CVFPB. Together, the action agencies are preparing a set of documents that are expected to be the basis for a recommendation for Congress to authorize a new project(s). The documents will describe the flood risk to the Central Valley and will present planning, engineering, and implementation details of the recommended plan to allow final project implementation to proceed when the recommended plan is approved.

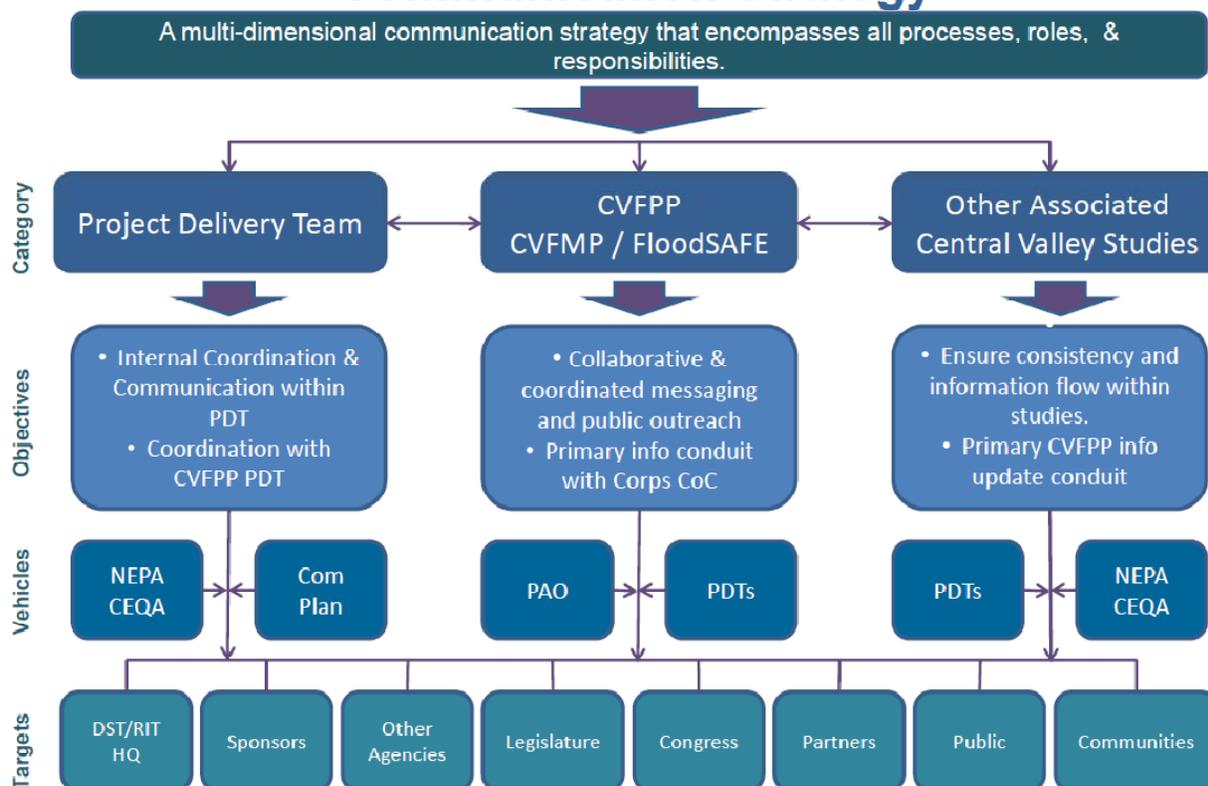
The CVIFMS will be developed in an integrated water resource management context and will complement the CVFPP system level planning strategy, with an emphasis on developing a Federal/State implementation process for the CVFPP. The USACE Engineering Circular 1105-2-411 provides a basic framework for identifying roles and responsibilities for the CVIFMS to be developed in coordination with the CVFPP process. These are support, communication, and lead roles. The CVIFMS process will include two major work product efforts:

- A Programmatic Implementation Framework Document (Framework Document), will be developed in a format and context that corresponds to the State's 2012 CVFPP Report. The document's primary purpose will be to provide a status update and a strategy that defines how the CVIFMS will be coordinating with the CVFPP in moving toward a Federal/State FRM implementation process for the CVFPP, including possible immediate feasibility study implementation recommendations. The targeted audience is Congress and the California Legislature.
- A Programmatic Feasibility Study (Feasibility Study), due 2017, will be a programmatic level study prepared in an integrated water resource management context. The study will incorporate CVFPP shared data, and the content will be coordinated with the 2017 CVFPP Report. The study will provide an FRM evaluation of the Central Valley, with a recommended process for Federal/State implementation and cost sharing. The strategy is for the study focus to be at the feasibility level where needed so that alternatives, inclusive of the State Systemwide Investment Approach, can be evaluated and Federal recommendations can be implemented following completion of the study. A joint NEPA/CEQA document will be developed in support of the study alternatives and recommendations.

An integral component of the successful development of a decision document, the NEPA/CEQA environmental compliance process, as well as the planning process, is an effective communication strategy that encompasses all aspects of team, agency, and public involvement. Since this study is large in scope and may generate some controversy, the communication strategy is of high importance. This communications plan describes the communication strategies and activities that the Project Development Team will employ to ensure public participation and public and agency awareness throughout the life of the project.

The communication process will include close coordination between the USACE and the non-Federal sponsors. This communication plan is designed to support the preparation of the Framework Document, the Feasibility Study, and the NEPA/CEQA document, as well as the overall CVIFMS/CVFPP process. The chart on the following page illustrates the planned multidimensional communication strategy, which encompasses all processes, roles, and responsibilities. The plan will be further developed in coordination with the State's evolving plan for development and communication of the CVFPP.

Central Valley Integrated Flood Management Study Communication Strategy



2. PROJECT BACKGROUND

Major flooding throughout the Central Valley has been well documented since the early 1800s, prompting various planning efforts by local, State, and Federal entities over the last century. These efforts have resulted in the construction of flood management features and systems throughout the valley. Despite these activities, damages from flooding in February 1986 and January 1997 were the highest on record, shedding light on the susceptibility of the Central Valley and its growing communities to catastrophic flooding.

In response to concerns primarily raised by the 1997 flood, the Governor of California formed the Flood Emergency Action Team. In its May 1997 report, the team recommended developing a “new master plan for improved flood control in the Central Valley.” The California Legislature in September 1997 and the US Congress in 1998 authorized the Comp Study. From this authorization the State and the USACE developed the Comp Study, Interim Report, dated December 20, 2002.

A process evolved from the Comp Study planning efforts to develop future projects to meet the system’s comprehensive public safety, flood damage reduction, and ecosystem restoration objectives. This process consists of guiding principles for integrating flood damage reduction and ecosystem restoration in future changes to the flood management system. The process provides an approach that ensures system-wide effects are evaluated regardless of project scale and an administrative structure to oversee consistent application of the process. These guiding principles for planning future projects, published in 2002, provided valued lessons learned for the current efforts of the State’s FloodSAFE/CVFMP-CVFPP and the CVIFMS process.

The devastation and loss of life resulting from Hurricane Katrina in 2005 further raised public awareness of catastrophic storms throughout the nation. In response, California voters passed the Disaster Preparedness and Flood

Prevention Bond Act (Proposition 1E) and the Safe Drinking Water, Water Quality and Supply, Flood Control, River, and Coastal Protection Bond Act (Proposition 84) in November 2006, providing a combined nearly \$5 billion in State funding for flood management improvements.

In 2007, the California Legislature passed five interrelated bills aimed at addressing the problems of flood protection and liability, including SB 5, SB 17, AB 5, AB 70, and AB 156. SB 5 directed the DWR to develop and the CVFPB to adopt the CVFPP. One of the objectives of the CVFPP is to develop a vision for future flood management in the Central Valley. Due to the interests of the CVFPB, DWR, and the USACE in existing and future Federal/State water resources projects and programs in the Central Valley, the non-Federal sponsors have requested USACE assistance in developing the CVFPP. The intent is to build off the Comp Study and other studies to develop the 2012 CVFPP document. The non-Federal sponsors and the USACE are developing PMPs and a new FCSA to prepare an integrated watershed study of the CVIFMS that will support preparation of the CVFPP.

The purpose and intent of the CVIFMS is to provide Federal support for the CVFPP vision of improved flood management in the Central Valley. The CVIFMS and the CVFPP will be well coordinated and will function essentially as one integrated study with common goals. As with the CVFPP effort, the CVIFMS will build on the tools and recommendations that were developed during the Comp Study and will provide a means to support that vision. The CVIFMS team, in developing the PMP and associated documents, will synchronize with the CVFPP efforts to stress efficiency, coordination, and communication. The CVIFMS effort will focus on FRM measures and alternatives that would be in the Federal interest and be consistent with USACE guidelines and policies. It will provide parallel technical and policy support to the CVFPP study. In addition, the CVIFMS will include investigations of, and potentially, recommendations for Federal actions that the USACE could pursue through design and construction, given concurrent local sponsor interest.

3. COMMUNICATION AND COORDINATION BETWEEN CVIFMS AND CVFPP TEAMS

The USACE will communicate and coordinate with the non-Federal sponsors, DWR, and the CVFPB at both executive and project levels. Executive level briefings will be scheduled to inform senior level executives on project status and to solicit guidance on program direction. At the project level, review, communication, and lead roles will be established as identified in the PMP Enclosure C—Detailed Scope of Work. At the staff level, communication and coordination is expected to include regularly scheduled planning meetings as well as informal e-mail and telephone communications almost daily. Details concerning delivery management, other organizational roles, deliverable tracking, financial reporting, and other aspects of day-to-day program management will be developed during the initial planning phase of the work effort.

4. PUBLIC SENSITIVITY

Public involvement on past flood management projects has indicated that affected communities can be sensitive to the impacts resulting from proposed flood risk reduction measures. Thus, the formulation of alternatives and public communication for this study must be well planned and implemented with thoughtful consideration of community sensitivities. Caution must be used in the following:

- **Technical scope areas.** Explaining technical scope areas, particularly in cases where issues addressed in previous technical investigations must be reanalyzed.
- **Seeking public input.** Public provided input during previous investigations should be incorporated to the extent possible. The PDT should not seek input on information already provided.
- **Providing alternatives.** Local sensitivities should be taken into account when presenting CVIFMS alternatives.

The USACE will rely on and will work closely with the non-Federal sponsors and local stakeholders for public outreach. Local meetings and outreach will be led by the non-Federal sponsors and local officials that have a high level of credibility with the public.

5. PUBLIC OUTREACH PHILOSOPHY

The USACE and non-Federal sponsors are committed to implementing an outreach program that sustains an open and transparent process. Outreach will be designed to solicit meaningful participation, education, and input by a broad and balanced variety of public and private interests.

6. GOALS AND OBJECTIVES

The goal of the communication plan is to develop and implement a proactive and meaningful public and agency involvement, education, and outreach process. The process will include close coordination and communication between the CVIFMS and CVFPP staff to provide a consistent message to the public. The process will be designed to provide completed information, timely public notification, educational opportunities, and a forum by which stakeholder and general public comments are solicited. Specifically, the objectives of the public involvement and outreach effort are as follows:

- Educate stakeholders and interested parties about the flood risk, alternative risk reduction strategies, processes, and schedules;
- Facilitate effective communication between key decision makers and other interested parties affected by the identified alternatives;
- Communicate the need for a flood risk reduction project clearly and openly;
- Provide general and technical information in a form that is readily understandable;
- Solicit input and ideas to help formulate alternative projects and provide sufficient opportunities for parties to express their comments;
- Be cognizant of, understand, and appropriately address public issues and concerns; and
- Generate confidence and credibility in the process and project.

7. GUIDING PRINCIPLES

The guiding principles of the communication plan are as follows:

- Provide interested parties with ample opportunities to participate in the process;
- Involve the public in an open dialogue;
- Seek meaningful input from the public to assist in the development of alternatives to reduce the flood risk;
- Target outreach efforts to all stakeholders;
- Ensure information is factual, accurate, consistent, and distributed in a timely fashion;
- Present information to the public in readily understandable terms and formats; and
- Establish feedback loops to ensure that the public comments are addressed and that the public understands the responses to comments.

8. OVERALL APPROACH

The overall approach to the communication plan is to outline communication and outreach strategies to gain the appropriate level of participation by the partners, agencies, the public, and the community regarding flood

risk reduction alternatives, to inform the public of the proposed actions, and to solicit stakeholder and community input. The multifaceted approach will meet both the general communication needs of the project as a whole, as well as the provisions of NEPA and CEQA.

9. GENERAL OUTREACH STRATEGIES AND TACTICS

Listed below are the outreach strategies to be implemented that apply to the project as a whole and that are common to all audiences. These strategies and tactics should be used throughout the life of the project to keep the public informed and to promote key milestones.

- a. **Stakeholder Identification, Assessment, Issues.** At the onset of public involvement, audiences and their specific issues and concerns will be identified to assess the likely level of public involvement and to hone in on the most effective outreach activities. Understanding the most relevant issues for each target audience will achieve the best outreach results. Stakeholders may include the following:

- Federal agencies;
- State agencies;
- Counties and cities;
- Reclamation districts;
- Regional flood control agencies;
- Delta interests;
- Community interests;
- Agricultural and farm interests;
- Environmental and nongovernmental organizations;
- Recreation interests;
- Elected officials;
- Media;
- Environmental justice communities; and
- Tribes.

Identification of stakeholders is often linked to what issues they may have. The PDT will identify the problems, concerns, and issues that potential stakeholders might have. Issues will be updated and reevaluated as the study progresses. Issues may include the following:

- Cultural, including issues related to Section 106, traditional cultural properties, cultural landscapes, and community cultural heritage;
- Economic and fiscal;
- Environmental;
- Environmental justice;
- Institutional;
- Legal;
- Political (Federal, State, local, tribal);
- Safety and health; and

- Engineering.

Based on stakeholder assessment and the issues identified, the PDT will identify public involvement expertise and effort needed from various organizational units.

- b. **Key Message Development/Risk Communications Training.** To ensure consistent and clear messaging, general language and topic-specific messages will be developed for use during the project. Key messages will be developed based on anticipated issues and for anticipated milestones in the planning process.

In preparation for public review periods, when interaction with stakeholders, media, and the public is anticipated, a select group of PDT members will convene to participate in risk communications training. The training will assess potential hot-button issues, will review and refine talking points, will designate appropriate spokespersons, and will review media protocol.

- c. **Informational Materials and Media.** In an effort to effectively inform the target audiences about the project and process, informational materials will be developed. To the extent possible, the same graphic elements (such as color scheme and design look) will be incorporated into all informational materials to create a uniform design for the project. Informational materials may include to the following:

- **Brochure**—A brochure describing the overall program, current authorization, planning process, NEPA/environmental compliance process, background information, public participation opportunities, and schedule;
- **Fact sheet**—Topic-specific fact sheets outlining issues, approach, methods, goals, and objectives;
- **Multimedia Communication**—This could include iPhone/iPad applications;
- **Frequently asked questions document**—Typical anticipated questions and answers to provide information in a proactive manner;
- **Presentation materials**—A standard presentation, easily adaptable to audience and stage of study process, for use at briefings or at public meetings;
- **Display advertisements**—These will be secured to generate publicity for the public meetings and will run in regional and local newspapers;
- **Meeting announcement**—A public meeting notice will provide information about the process, schedule, and purpose of the public meetings and a list of contacts for additional information;
- **Displays boards**—These will be prepared for the meetings to provide visual information on a large scale. They might include maps, process descriptions, project purpose and need, environmental review process, and public input opportunities;
- **Draft technical reports for review**—The draft decision document, along with the NEPA/environmental compliance process and all technical appendices, will be provided to the public for review; and
- **Final technical products**—The final decision document, along with the NEPA/environmental compliance process, and all technical appendices, will be provided to the public.

In order to reach as many stakeholders as possible, a diverse assortment of media will be used to disseminate information. This media may include the following:

- **Press and news releases**—Press releases may be generated and distributed;
- **Meetings and workshops**—Small group meetings and larger public meetings will be held to obtain stakeholder views, to disseminate information, and to answer questions;
- **Project website**—A website dedicated to the project will provide ready access to information and a convenient way to organize all the files and information that are available to the public. Project materials, such as fact sheets, presentations, maps, comments, and meeting announcements, can be made available for posting; and

- **Media interviews**—Interviews with print and broadcast media can be held to disseminate information. Only appropriate spokespersons will conduct interviews.
- d. **Mailing List/Contact Database.** A mailing list of contacts will be developed to include all stakeholders with an interest in the project. This database will be a means to notify individuals and groups directly or to generate a mail or e-mail distribution list for information dissemination.
- e. **Public Meetings.** Various formats will be used to provide a forum to share information and to receive public input. The following meetings are planned:
- **Small group meetings**—These will be held with Native American communities/Tribes and selected interested groups and stakeholders before the F2 public workshop/scoping meetings and throughout the project as the need is identified. The purpose of these meetings is to gather support and project buy-in before the public meetings and to assuage concerns about how this project will compare to the previous project.
 - **Public workshop and scoping meeting**—This will focus on obtaining input from the public, informing the public about the project, and fulfilling scoping requirements for NEPA purposes. The meeting format is anticipated to be an informal open house style, consisting of information stations for discussing various topics, including project history, proposed actions, and the environmental review process.
 - **Public Meeting to discuss draft**—Once the draft feasibility report, NEPA/environmental compliance documentation, and technical appendices are released for public review, a public meeting will be held where oral presentations on scientific issues can be made to the reviewers by interested members of the public.

The PDT will use comments received via public meetings or workshops to help shape the project components and to make the project as successful as possible. Comments will also be provided to the ATR team and the IEPR panel.

- f. **Working Group Coordination.** The PDT will use a variety of topic-specific working groups to effectively address project-related issues. The working groups will set clear goals, will establish relevant meeting schedules, and will determine the list of participants. Communication between the working groups will be coordinated through a singular PDT member, ensuring information is shared, consistent, and appropriately managed throughout the duration of the project.
- g. **Input into Feasibility Study.** The decision document will include a description and evaluation of the efforts made to acquire public input, the information and opinions expressed, and how public input was used in the planning and decision making process.

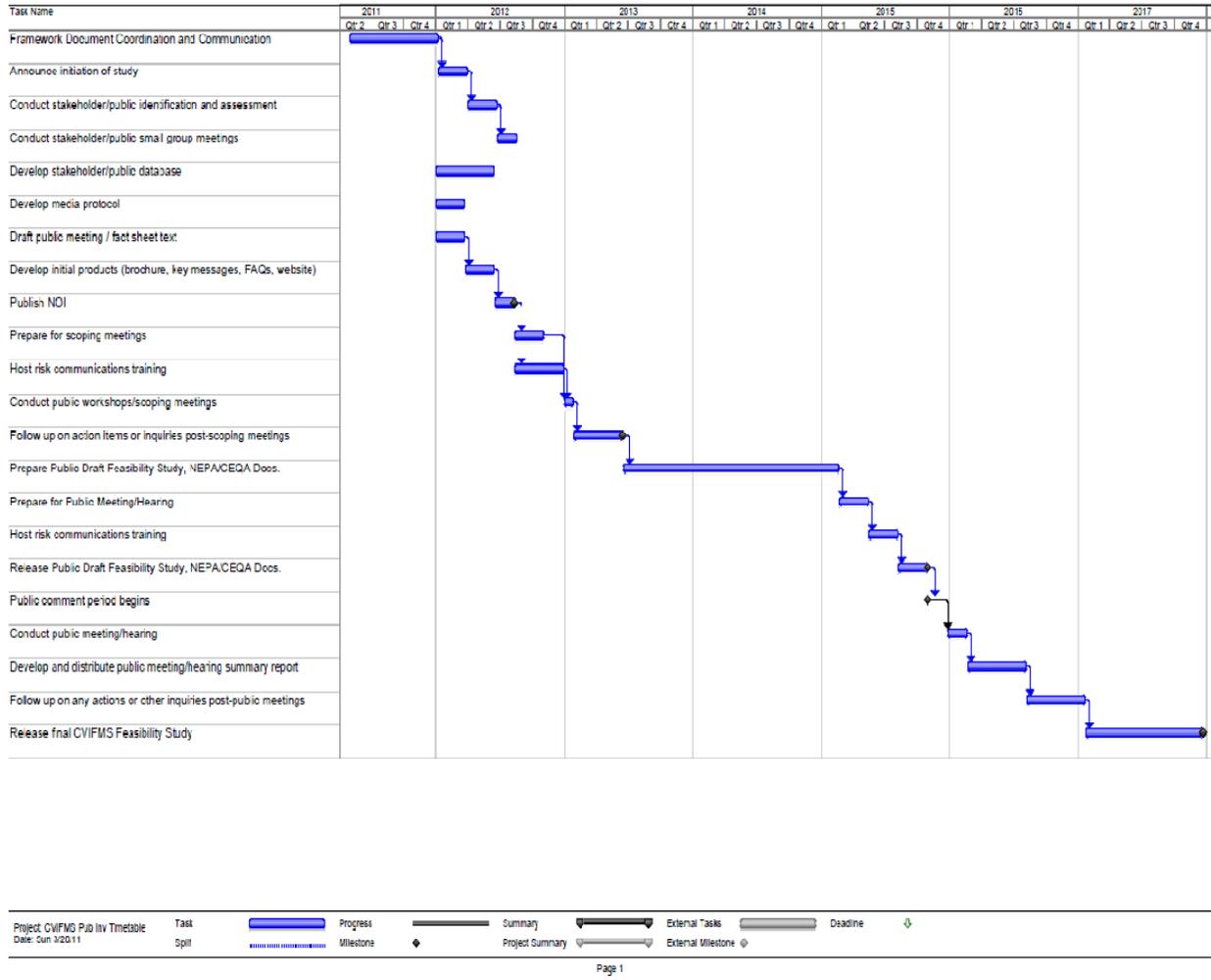
10. EVALUATION OF COMMUNICATIONS PLAN IMPLEMENTATION

The communication plan will be evaluated periodically throughout the life of the public involvement effort. Based on the findings, communication strategies will be adjusted accordingly. Evaluations will include surveys of participants at public meetings to assess the following:

- The level of stakeholder understanding of the process, project status, and agency roles;
- The level of stakeholder satisfaction that the process is open, objective, and fair;
- The level of success in maintaining open and consistent lines of communication with the public and cooperating and participating agencies;
- The number of individuals participating in public meetings, small group discussions, and additional communications, as well as the number of independent comments received; and
- The confidence of participants in the process as a whole.

11. PRELIMINARY OUTREACH SCHEDULE

The preliminary outreach schedule is shown below. Dates will be refined as the study progresses.



12. COMMUNICATION TEAM

Points of contact for the communication team are as follows:

- To be determined.

ENCLOSURE H—GEOSPATIAL DATA MANAGEMENT PLAN

A draft Geospatial Data Management Plan has been prepared for the CVIFMS. For completeness, the draft plan is included here.



**US Army Corps
of Engineers®**

Geospatial Data Management Plan

Division	South Pacific (SPD)
District	Sacramento (SPK)
Date	
Project	Central Valley Integrated Flood Management Study
Location	
P2 Number	154612
Project/Program Manager: Tom Karvonen	
Approval Signature:	Date:
Geospatial Technical Lead : Casey Young/ Destani Hobbs	
Approval Signature:	Date:
<input type="checkbox"/> Cover Sheet Copy Sent to Division eGD&S Manager by District Geospatial Technical Lead Date:	

Cover Sheet

Geospatial Data Management Plan

1 Introduction

The Geospatial Data Management Plan (GDP) integrates geospatial data management into the Project Management Business Process (PMBP) and facilitates the implementation of enterprise data management. This data collection and management plan covers Computer Aided Design and Drafting (CADD) and Geographic Information System (GIS) products. Implementation of this plan will allow project delivery teams (PDTs) comprised of experts from various districts to work collaboratively on a project. For this collaboration to become a reality, the U.S. Army Corps of Engineers (USACE) must follow established criteria, policy and guidance for the acquisition, processing, storage, distribution, and use of geospatial data. PDT members who are responsible for collecting spatial data and producing CADD and GIS products have a major role to play in the success of this effort.

1.1 Applicability

This plan shall apply to all district civil, HTRW, and military projects that will have a geospatial component at any phase of the project. Scopes of work and project management plans shall address the geospatial data component of the project to make sure that data is being collected, used and managed in such a way as to maximize its value throughout the life-cycle of the project and the related programs.

1.2 Funding

Funding for the preparation and implementation of this plan shall be provided by the individual project to which it applies.

1.3 Geospatial Responsibilities of the PDT

The PDT needs to define:

- Data objectives and quality requirements
- Data format
- Data collection methods and what data are available, in development, or stored (both on- and off-site)
- Timeliness of data availability
- Data analysis and access - the uses of the data
- How to incorporate this data into the project decision process
- Data access, storage and control - how the data will be managed over time

1.4 Role of the Geospatial and CADD Specialists on the Project Delivery Team (PDT)

- Support the PDT in the efficient execution of civil, HTRW, military construction and environmental restoration projects.
- Help protect the investment in CADD, geospatial data, applications and institutional knowledge.
- Facilitate the sharing of CADD and geospatial data among civil, military and environmental projects.
- At the project initiation phase determine how large of a role CADD and geospatial technologies will play.

- Educate the project managers and PDT members on how CADD and geospatial technology can be used to add value to the project.
- Identify CADD and geospatial data requirements and ensure that the appropriate CADD, geospatial, and data model and data standards are followed. This includes following the current A/E/C CADD standard, Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) and development of FGDC metadata.
- Acquire existing geospatial datasets from federal, state, local agencies, the public domain and available through USACE licenses agreements.
- Reformat data as required for use with the geospatial technologies.
- Create new data layers through the integration of existing and acquired data.
- Integrate CADD and GIS data.
- Identify CADD and geospatial application requirements needed for the project.
- Develop geospatial technology applications in accordance with applicable guidelines and standards.
- Perform spatial analysis and data modeling.
- Provide data visualization and mapping products.
- Develop and maintain a geospatial data management plan for the life cycle of the project.

1.5 Geospatial Data Checklist

This checklist will be completed by project geospatial technical leads to ensure project efforts to collect geospatial and geotechnical data meet required configuration, system, and data quality requirements.

All projects that include tasks to use or produce geospatial data must clearly state what will be collected, what will be delivered, the format it will be delivered in, and who will be responsible for updates and maintenance. This is necessary whether the work is done by contract or by District staff. This checklist is designed to aid project team members with writing geospatial data collection and management portions of the Project Management Plan (PMP). **This checklist is to be filled out by the Project Manager and the project's geospatial data technical lead.** This checklist becomes a permanent part of the project's geospatial data plan and subsequently the project's PMP.

I. Project/Contract Specific Information

1. Project Title: Central Valley Integrated Flood Management Study
2. Proposed Contractor/In house: To be determined
3. USACE Project Manager: Tom Karvonen
4. Geospatial data technical lead: Casey Young/ Destani Hobbs

II. Identify project geospatial data requirements

Do not automatically assume that there is a geospatial or geotechnical data requirement. These questions are intended to develop a rationale for identifying such a requirement.

1. Why is this effort being undertaken and why is there a geospatial or geotechnical data aspect? The Central Valley Integrated Flood Management Study will provide a Flood Risk Management Evaluation of the Central Valley and will complement the Central Valley Flood Protection Plan that is currently being developed by the State. It is anticipated that data will be shared between USACE and the State.

2. What types of data will be collected? (e.g. soil samples, acquire aerial photographs, well construction information, etc.) Aerial photography and satellite imagery may be acquired as well as LiDAR. A large amount of data will be gathered from existing projects that are in the same geographic area.

3. How will this data be used now and in the future? (e.g. generate annual reports) Data will be used to support the Programmatic Feasibility Study, which is anticipated to be completed by 2017.

4. Check the following that apply to proposed data.

- Data will not contain location (geospatial) or (geotechnical) information. *Does not require inclusion in the District's GIS.*
- Data contains location (geospatial) or (geotechnical) information. This information will not be altered in the future (i.e., is temporary in nature, such as proposed well locations). This information will not need to be accessible for use in other mapping projects in the future.
- Data contains location (geospatial) or (geotechnical) information. All or a portion of the data may be used on future maps but the graphic attributes will never need to be queried. *Data may be stored as electronic graphic files (i.e., CAD or GIS or image files) without database connection in the District GIS, to allow creation of new maps (e.g. report showing work site boundaries).*
- Data contains location geospatial or geotechnical information. Will require queries and modeling to be performed on the data and its attributes in the future. *This is a potential District GIS data set (e.g. location and concentration of contaminants at a cleanup site). Deliverables must conform to the specifications of the District's GIS.*

5. HQUSACE standards compliance reporting database requirements.

Project must be entered into HQ USACE GIS/CADD standards compliance website and the database must be updated at major project milestones.

- Completed
- Not Completed, Reason: Project is still in beginning stages.

III. Identify proposed datasets using above information:

1. Which data sets should be included in the District eGIS? Do data structure or models (tables, etc) for this data already exist in the District eGIS or elsewhere in the Corps or will new tables, GIS layers, etc. need to be developed and added to accommodate this new data?

Data Set(s) & Their SDSFIE feature class:

Data Set	Dist. GIS Data Level (1,2,3)*	SDSFIE or A/E/C Category	New	Update
Transportation		SDSFIE		X
Hydrology		SDSFIE	X	
Open Space		SDSFIE	X	X
Cadastre		SDSFIE		X
Organizational Boundaries		SDSFIE		X
Floodplain		SDSFIE	X	
Land Coverage		SDSFIE	X	
Land Use		SDSFIE	X	
County Level Data		SDSFIE	X	
2010 Census Data		SDSFIE		X
Aerial/ Satellite		SDSFIE	X	X
1 = Corporate data, must be SDSFIE or A/E/C-compliant if produced by USACE, stored in geodatabase, FGDC compliant metadata required 2 = Project data, must be SDSFIE or A/E/C-compliant if produced by USACE, stored on file server, some metadata required 3 = Interim data, must include metadata if stored on file server more than 30 days				

2. Include the appropriate CADD/GIS standards and specifications in the SOW (for contracted work) or reference them in the PMP (for in house work).

IV. Data Acquisition

- 1. Is the data already available? Yes No
- Geo-1-Stop checked for available data
- NSDI geospatial clearinghouse search completed
- Satellite data coordination coordinated

Data acquired from Other Federal, State or Local Agencies, Stakeholders, Partners, etc.

The geospatial specialist and applicable PDT members shall insure that the data obtained from external sources is used appropriately with regard to any licensing or security issues. Data acquired from these sources are **not** required to be converted to SDSFIE.

Data Use Category (if applicable) : "For General Use" Sensitive "Official Use Only" Other

Data Collected by In-House or Contract Labor

If the data does not exist, PDT members requiring the data shall be responsible for writing the scope of work for collection and delivery. The geospatial specialist shall assist with the scopes as needed and/or review them to insure that the data is collected and delivered as follows:

- In accordance with the standards specified in reference 15, Technical Report CADD-03-, dated July 2003, Subject: Contract Language Guidelines for Acquiring Geospatial Data (CADD, GIS, CAFM) System Deliverables from Architect-Engineer (A-E) Consulting Firms.
- In accordance with the guidelines provided in reference 9, Engineer Manual 1110-1-2909 Geospatial Data and Systems, 30 September 05
- In compliance with the latest version of the Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE).
- Provided with FGDC metadata.
- Provided in proper digital format.

When the data is received the geospatial specialist and/or PDT member shall review the deliverables for compliance with the requirements above.

Data Purchased from Vendor

- Data needs to be purchased
 Source & Associated cost _____
 Licensing and sharing agreements for data reviewed

CADD and Geospatial Data Delivery and Management

- CADD Data Mgmt: ProjectWise Other _____
 GIS Data Mgmt: ProjectWise FTP Other: Server/ Email

CADD Data Delivery: District PDT is to determine if CADD data that is geospatial in nature such as site plans, channel boundaries and depths, utilities, building locations, etc. will be converted into a GIS geodatabase format by either the geospatial specialist or provided as a deliverable from contractor. This will ensure the District has data in a GIS format for future use/analysis.

Geospatial Applications, Analysis and Modeling Needed for the Project:

- Website Geodatabase Database integration with GIS

- Surface Generation Hydrographic Models 3D Models
- Site Selection Analysis Area/Volumetric computations Sediment
- Floodplain delineation Other _____

Deliverable Format

Note: All geospatial and geotechnical data deliverables must comply with the standards and specifications of the District’s CADD/GIS Enterprise Geospatial Data System (eGDS). Included in this are standards for complete metadata regarding the data collection and processing of the data.

What file format(s) will be used to prepare the project’s geospatial data deliverables?

Geospatial data (shape file or personal geodatabase for GIS, Microstation for CADD, is preferred, must conform to the SDSFIE for GIS or A/E CADD Standard for CADD)

- Data format:
- ASCII text comma delimited file (tables with column headings and point data only)
 - ESRI shape file
 - ESRI coverage
 - ESRI personal geodatabase
 - ESRI SDE geodatabase
 - Microstation/AutoCAD
 - Other: _____

- Horizontal Datum:
- WGS 84
 - NAD 83 (Preferred)
 - NAD 27
 - Other: _____

- Vertical Datum:
- NAVD 88 (Preferred)
 - NAVD 29
 - Other: _____

- Coordinate System/Zone:
- State Plane
 - _____ North
 - _____ South
 - _____ East
 - _____ Central
 - _____ West
 - Other: CA State Plane Zone 1, 2, 3, and 4
 - Universal Transverse Mercator (UTM)
 - Zone 10
 - Zone 11
 - Zone ____
 - Other: _____

Projection: Geographic
 Transverse Mercator
 Lambert Conformal Conic
 Albers
 Other: _____

Horizontal measure: Feet
 Meters
 Latitude/Longitude
 Other: _____

Vertical measure: Feet
 Meters
 Other: _____

2. Will the contractor/PDT members produce a completed data package or will the project's geospatial data technical lead complete the deliverable? In most instances, the geospatial data technical lead at minimum will need to review that data and *load* it into the District's eGIS. If the contractor is to complete the data package, please indicate why this option is necessary.

To be determined

Contractor/PDT
 Justification: _____

Project geospatial data technical lead

3. Does the contractor/PDT require a copy of or access to the existing applicable District CADD/GIS data? If not, please provide justification. To be determined

4. Will the contractor/PDT be responsible for ensuring the data is compatible with the current District CADD/GIS data standards? If not, please provide justification. _____

Contractor/PDT has been provided with a **current** copy of the Data Standard

Contractor/PDT will contact the USACE POC regarding Data Standard requirements

5. Where will the GIS work be accomplished (location)?

USACE, Sacramento District, GIS and Mapping

6. Will the contractor/PDT be using their own or Geospatial Data Section-furnished GPS equipment and GIS workstations?

GPS source: NA Contractor/PDT COE COE to provide training

7. Will the contractor perform post-processing on GPS data?

Post-Processing: NA Contractor/PDT COE COE to provide training

8. Metadata:

Contractor/PDT will provide sufficient documentation regarding the electronic deliverable files as delineated in the District's CADD/GIS data standard.

Geospatial Support to Customers

Customer was contacted to determine compatibility of project data with their systems/policies?

Yes No

Notes _____

Data is complete and compatible with customer's CADD system and eGIS:

Yes No Notes

Notes: Data may need be reverted from ArcGIS 10 to ArcGIS 9.3 to meet the needs of PDT.

V. Data Maintenance

1. Maintenance and Updates:

- This is a one-time data delivery.
- Contractor/PDT will provide regularly scheduled data updates to be added to existing files and tables.
- Contractor/PDT will provide maintenance and regularly scheduled complete updates of the entire table contents and associated graphics.
- The project's geospatial data technical lead will provide required maintenance and updates to data.

2. Project deliverables must be cataloged in the District's geospatial data inventory database.

VI. Approval

1. Project Manager:

Name: _____

Signature: _____ Date: _____

2. Geospatial Data Technical Lead:

Name: _____

Signature: _____ Date: _____

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ENCLOSURE I—LETTER OF INTENT

The letter of intent from the non-Federal sponsors is provided below.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY	ARNOLD SCHWARZENEGGER, GOVERNOR
	
<p>CENTRAL VALLEY FLOOD PROTECTION BOARD 3310 El Camino Ave., SACRAMENTO, CA 95821 (916) 574-0609 FAX: (916) 574-0682 PERMITS: (916) 574-0685 FAX: (916) 574-0682</p>	<p>DEPT. OF WATER RESOURCES 1616 Ninth Street, P.O. Box 942836 Sacramento, California 94236-0001 (916) 653-7007 FAX: (916) 653-5028</p>
<p>May 25, 2010</p> <p>Colonel Thomas Chapman U.S. Army Corps of Engineers Sacramento District 1325 J Street Sacramento, California 95814</p> <p>Dear Colonel Chapman:</p> <p>The State of California (State) is willing to act as the non-federal sponsor for the Central Valley Integrated Flood Management Study (CVIFMS). We understand that this will require entering into a new feasibility cost share agreement (FCSA) for this effort.</p> <p>The State will be represented by both the Department of Water Resources and the Central Valley Flood Protection Board in the new FCSA. This is primarily because we each operate under different authorities. We have each reviewed the draft Project Management Plan and FCSA for the CVIFMS and are ready, willing, and able to execute the cost share agreement with the U.S. Army Corps (Corps) of Engineers when completed. It is our intent that all three parties will work collaboratively to accomplish both the State and federal goals outlined in the FCSA.</p> <p>We appreciate this opportunity to continue our work with the Corps to further reduce the risk of flooding in the Central Valley and develop a plan for the long-term stability of flood management issues in the area.</p> <p>If you have any questions regarding this subject, please contact Jay Punia at (916) 574-0609, or your staff may contact Jeremy Arrich, Chief of the DWR's Central Valley Flood Planning Office, at (916) 574-2550.</p> <p>Sincerely,</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>Jay S. Punia Executive Officer Central Valley Flood Protection Board</p> </div> <div style="width: 45%;">  <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>Gary Bardini Chief, Division of Flood Management Department of Water Resources</p> </div> </div>	

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ENCLOSURE J—DRAFT PROJECT SCHEDULE

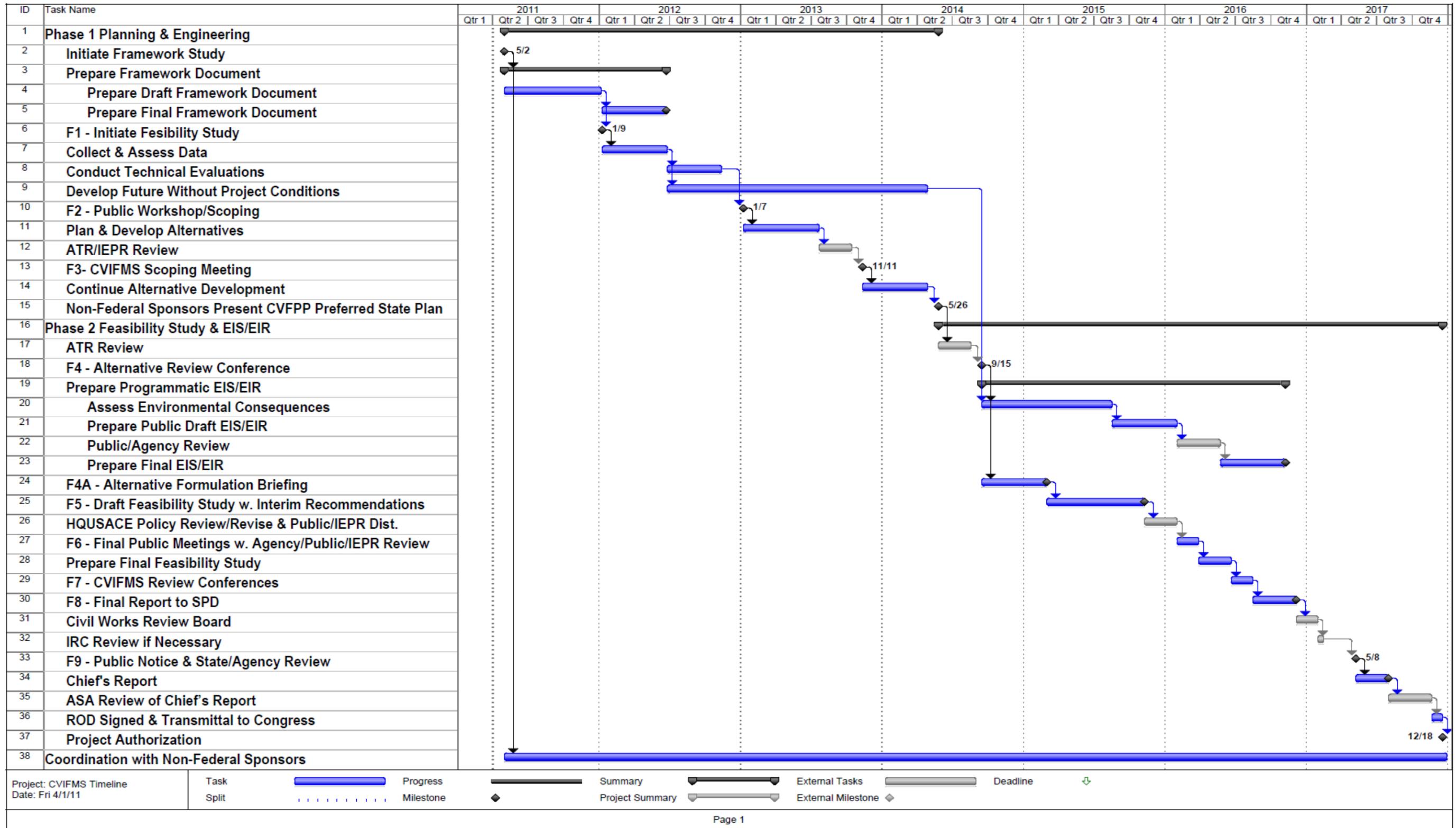


Figure 6. Draft Programmatic Project Schedule.

ENCLOSURE K—RELATED STUDIES, PLANS, AND PROJECTS

In addition to the reports and projects listed Section 2.5 of this PMP, a large number of studies and projects in and adjacent to the Central Valley are related to FRM. Some of the more relevant programs and project documents, including EISs and EIRs, are listed in Table 8. The studies, plans, and projects listed here are either ongoing or have been completed within approximately the last dozen years. They involve technical issues that bear on the CVIFMS scope, and are either located in the Central Valley general study area or the downstream Delta area that would be affected by flooding in the Central Valley. The list provided in here is not comprehensive, but provides the context in which the CVIFMS will be conducted.

Table 8. Selected Studies, Plans, and Projects Relevant to the CVIFMS

REGIONAL PLANNING AND PROGRAMS	
CENTRAL VALLEY	DELTA
<ul style="list-style-type: none"> • <u>Upper/Lower Sacramento</u> • CA Water Plan Sacramento River Regional Report (2009) • Sacramento River Bank Protection Project (USACE) • Sacramento River Evaluation Study (USACE) • <u>Upper/Lower Sacramento</u> • Sutter Basin Project (USACE) • <u>Upper San Joaquin</u> • CA Water Plan San Joaquin River Regional Report (2009) • <u>Lower/Upper San Joaquin</u> • CA Water Plan San Joaquin River Regional Report (2009) • <u>Lower San Joaquin</u> • DWR Sacramento San Joaquin Erosion Repairs (DWR) • <u>Lower San Joaquin</u> • DWR Sacramento San Joaquin Erosion Repairs (DWR) • Lower San Joaquin River Feasibility Study (USACE) • <u>Upper San Joaquin</u> • San Joaquin River Parkway Master Plan (2000) • San Joaquin River Restoration Program 	<ul style="list-style-type: none"> • CALFED Levee Stability Program (USACE) • Sacramento River Bank Protection Project (USACE) • Levee System Integrity Program (DWR) • Delta Risk Management Strategy (DWR) • Delta Long Term Management Strategy (USACE) • Delta National Heritage Area (DPC) • Delta Long Term Management Strategy (USACE) • Delta Conservancy Interim Strategic Plan (2011) • FloodSAFE Framework for DWR Investments in Delta Integrated Flood Management (2011) • Delta Economic Stability Plan (2011) • Floodway Corridor Program (DWR) • Federal Action Plan for the California Bay-Delta (2009) • Delta Vision (2008) • CA Water Plan Delta Regional Report (2009) • Delta Levee Special Flood Control Projects (DWR) • Delta Levee Maintenance Subventions Program (DWR) • DWR Sacramento San Joaquin Erosion Repairs • Land Use & Resource Management Plan for the Primary Zone of the Delta (DPC) • Delta Plan (DSC) • Bay Delta Conservation Plan
RESOURCE MANAGEMENT PLANS	
CENTRAL VALLEY	DELTA
<ul style="list-style-type: none"> • Draft Recovery Plan for Chinook and Steelhead (2009) • Central Valley Joint Venture Implementation Plan (2006) • CALFED Ecosystem Restoration Program (2000) • Restoration Plan for Anadromous Fish in Central Valley (1997) 	<ul style="list-style-type: none"> • Draft Recovery Plan for Chinook and Steelhead (2009) • Draft South Sacramento HCP (2010) • Solano Multispecies Habitat Conservation Plan (2009) • Yolo County Natural Community Conservation Plan (ongoing)

<ul style="list-style-type: none"> • <u>Lower Sacramento</u> • Draft South Sacramento HCP (2010) • Solano Multispecies Habitat Conservation Plan (2009) • Yolo County Natural Community Conservation Plan (ongoing) • Yolo Bypass Management Strategy (2001) • <u>Upper/Lower San Joaquin</u> • Recovery Plan for Upland Species of the San Joaquin Valley (1998) • <u>Lower San Joaquin</u> • Draft Calaveras River Habitat Conservation Plan (2009) • South Delta Flood Conveyance Plan (2004) • San Joaquin County Multi Species Habitat Conservation and Open Space Plan (2000) • <u>Upper San Joaquin</u> • Millerton Lake Resource Management Plan and General Plan (2010) • Cottonwood Creek Corridor Conservation Plan (2010) • San Joaquin National Wildlife Refuge Conservation Plan (2007) 	<ul style="list-style-type: none"> • Reclamation District 341 Sherman Island 5-Year Plan (2009) • Central Valley Joint Venture Implementation Plan (2006) • East Contra Costa County HCP and NCCP (2006) • Delta Region Drinking Water Quality Management Plan (2005) • South Delta Flood Conveyance Plan (2004) • Yolo Bypass Management Strategy (2001) • CALFED Ecosystem Restoration Program (2000) • San Joaquin County Multi Species Habitat Conservation and Open Space Plan (2000) • Draft Recovery Plan for the Giant Garter Snake (1999) • Restoration Plan for Anadromous Fish in Central Valley (1997) • Suisun Marsh Protection Plan (1976) • Suisun Marsh Plan (ongoing)
ENVIRONMENTAL COMPLIANCE	
CENTRAL VALLEY	DELTA
CEQA/NEPA	
<ul style="list-style-type: none"> • <u>Upper Sacramento</u> • Regulations for Protection of Green Sturgeon EA (2010) • Yuba City Feather River Fish Screen EA IS (2009) • Sac Bank 25 Critical Levee Erosion Repairs EA (USACE, 2009) • Bassett Diversion Fish Passage IS (2008) • Sac Bank 13 Critical Levee Erosion Repairs (USACE, 2008) • Tisdale Bypass Sediment Removal (2007) • Sac Bank Critical Levee Erosion Repairs (USACE, 2006) • Freshwater Marsh Mitigation IS (2005) • Bear Creek Bridge Replacement IS (2004) • Red Bluff Fish Passage EIS EIR (2002) • <u>Lower Sacramento</u> • Lower Yolo Restoration (2011) • Regulations for Protection of Green Sturgeon EA (2010) • Natomas Landside Improvements EIS EIR (USACE, 2010) • West Sacramento Levee Improvements EIS EIR (USACE, 2010) • Upper Yuba Levee Improvements IS (2010) • JFP Control Structure EA EIR (USACE, 2010) • Marysville Ring Levee EA (2010) • Furlan Mitigation Project EA IS (USACE, 2010) 	<ul style="list-style-type: none"> • Sacramento Ship Channel EIS (USACE, 2011) • Regulations for Protection of Green Sturgeon EA (2010) • Suisun Marsh Habitat Management, Preservation, and Restoration Plan EA (2010) • Kinder Morgan Suisun Marsh Diesel Fuel Oil Spill EA (2010) • Delta Wetlands Place of Use EIR/EIS (2010) • Mokelumne Slough Crossings IS (2010) • Montezuma Wetland Revised Permits IS (2010) • Sac Bank 25 Critical Levee Erosion Repairs EA (2009) • Bay Delta Conservation Plan Engineering Geotechnical Activities in Water IS (2009) • Decker Island Aggregate IS (2009) • Liberty Island Conservation Bank IS (2009) • 2 Gates Fish Protection Demonstration Project EA (2009) • Dutch Slough Tidal Marsh Restoration EIR (2008) • Environmental Water Account EIS/EIR (2008) • Delta Shores EIR (2008) • North Delta Flood Control and Ecosystem Restoration Project EIR (2007) – also known as McCormick Williamson • Lower American River Mile 0.5 Mitigation Site EA (2007)

<ul style="list-style-type: none"> • Mormon Island Dam Modification EIS (2010) • American River Common Features Remaining Sites 2A EA IS (USACE, 2010) • American River Common Features Remaining Sites 1A EA IS (USACE, 2009) • American Basin Fish Screen and Habitat Improvement EIS EIR (2009) • Star Bend Levee Setback EA (USACE, 2009) • Sutter Bypass Pumping Plants Control System Rehabilitation IS (2009) • JFP Early Approach Channel EA (USACE, 2009) • JFP Resident Office Relocation EA (USACE, 2009) • Sac Bank 25 Critical Levee Erosion Repairs EA (USACE, 2009) • South Sac County Streams EA (USACE, 2008) • Jacob Lane Levee Improvements (USACE, 2008) • South Yuba Sediment Reduction Project CE (2008) • American River Spawning Gravel EA (2008) • Cache Creek North Levee Setback Critical Erosion Site LM 3.9L and LM 4.2L (2008) • Tisdale Bypass Channel Rehabilitation IS (2007) • Lower American River Mitigation Site EA (USACE, 2007) • Mayhew Levee EIS (USACE, 2006) • Folsom DS FDR (USACE, 2006) • Folsom Dam Raise EIS EIR (USACE, 2006) • Spanish Creek Bridge Project EA (2006) • Magpie Creek Diversion Channel IS (2005) • Sacramento River East Levee Widening at RM 78_1 IS (2004) • Hamilton City EIS (USACE, 2004) • Mid Valley Phase III EA IS (USACE, 2004) • CALFED EIR/EIS (2000) • Yuba Basin EIS (USACE, 1998) <li style="text-align: center;"><u>Lower San Joaquin</u> • San Joaquin Five Critical Erosion Repair Sites (2009) • Lower Mokelumne River Spawning Habitat Improvement EA MND (2009) • 2010 Interim Flows EA IS (2009) • Farmington Groundwater Recharge EA (USACE, 2009) • Enterprise Canal at Big Dry Creek Improvement EA (2009) • Lower Calaveras River Below New Hogan Dam Anadromous Fisheries Restoration Plan EA (USACE, 2005) • Stockton Deep Water Ship Channel Aeration (2005) 	<ul style="list-style-type: none"> • Delta Emergency Rock and Transfer Facilities IS (2007) • McCormack Williamson Habitat Friendly Levee Rehabilitation Project EA/IS (2007) • Freeport Regional Water Project IS (2006) • Bair Island Restoration and Management Plan EIS/EIR (2006) • South Delta Improvements EIS/EIR (2005) • Stockton Delta Water Supply EIR (2005) • Delta Wetlands EIR/EIS (2001) • CALFED EIR/EIS (2000) • Hamilton Wetland Restoration Plan EIR/EIS (1998)
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<ul style="list-style-type: none"> • Farmington Groundwater Recharge Demonstration Project (USACE, 2004) • Lower Mokelumne River Spawning Habitat Improvement Project EA (2004) • River Islands at Lathrop EIR (2002) • San Joaquin Flows EIR EIS (2001) • CALFED EIR/EIS (2000) • SJAFCA Flood Control Agency Flood Protection Restoration Project (1996) • Lower San Joaquin River Clearing and Snagging EIS (USACE, 1989) • Calaveras River Reconnaissance Study for Flood Control EA (USACE, 1989) <p style="text-align: center;"><u>Upper San Joaquin</u></p> <ul style="list-style-type: none"> • San Joaquin River Restoration EIS/EIR (2011) • San Joaquin Reach 4B Bypass Notice of Intent (2010) • Millerton Lake Resource Management Plan and General Plan EIS EIR (2010) • 2010 Interim Flows EA IS (2009) • San Joaquin National Wildlife Refuge EA (2007) • Grassland Bypass EIR/EIS (2001) • San Joaquin Flows EIR EIS (2001) 	
PUBLICATIONS AND REPORTS	
CENTRAL VALLEY	DELTA
<ul style="list-style-type: none"> • CALFED Surface Storage Investigations Progress Reports (2010) • State Plan of Flood Control Descriptive Document (2010) • CVFPP Regional Conditions Report (2010) • CALFED Surface Storage Investigations (2010) • Sacramento-San Joaquin River Basin Study (1997) <p style="text-align: center;"><u>Upper/Lower Sacramento</u></p> <ul style="list-style-type: none"> • Sacramento River Basin: A Roadmap to Watershed Management (2010) • Sac Bank 2010 Erosion Recon Report (2010) <p style="text-align: center;"><u>Lower Sacramento</u></p> <ul style="list-style-type: none"> • San Joaquin River Mainstem Reconnaissance Report (1993) <p style="text-align: center;"><u>Lower/Upper San Joaquin</u></p> <ul style="list-style-type: none"> • San Joaquin Basin.com <p style="text-align: center;"><u>Lower San Joaquin</u></p> <ul style="list-style-type: none"> • Calaveras River Fish Migration Barriers Assessment Report (2007) • Lower Calaveras River Chinook Salmon and Steelhead Limiting Factors Analysis (2004) • Draft Plan of Action to Restore Salmon and Steelhead Populations in the Lower Calaveras River (2002) • Calaveras River Spawning Gravel Assessment (2000) 	<ul style="list-style-type: none"> • Seismic Hazard in the Sacramento-San Joaquin Delta (2011) • Report to CFG on Stressors Impacting Delta Related Organisms (2011) • Sacramento River Basin: A Roadmap to Watershed Management (2010) • State Plan of Flood Control Descriptive Document (2010) • CVFPP Regional Conditions Report (2010) • CALFED Surface Storage Investigations (2010) • Delta Ecosystem White Paper (2010) • Delta Flood Risk White Paper (2010) • Delta as a Place: Land Use White Paper (2010) • Water Resources White Paper (2010) • Emergency Response White Paper (2010) • Sac Bank 2010 Erosion Recon Report (2010) • National Heritage Area Feasibility Study (2010) • DPC Economic Sustainability Plan (2010) • DPC Economic Sustainability Plan (2010) • IEP Pelagic Organism Decline Synthesis (2010) • CALFED Surface Storage Investigations Progress Reports (2010) • Sacramento San Joaquin Delta Overview (2009) • Envisioning Futures for the Sacramento-San Joaquin Delta (2007)

<ul style="list-style-type: none">• San Joaquin River Mainstem Reconnaissance Report (1993) <u>Upper San Joaquin</u>• Draft Technical Report on Flow Alternatives (2010)• Restoration Objectives for the San Joaquin River (2003)	<ul style="list-style-type: none">• Comparing Futures for the Sacramento-San Joaquin Delta (2008)• The State of Bay Science (2008)• Sacramento-San Joaquin River Basin Study (1997)• Sacramento San Joaquin Delta Atlas (DWR 1995)
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**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

6. 2010 FEASIBILITY COST SHARE AGREEMENT

AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CENTRAL VALLEY FLOOD PROTECTION BOARD
AND
THE STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES
FOR THE
CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY

THIS AGREEMENT is entered into this 21st day of July, 2010 by and between the Department of the Army (hereinafter the "Government"), represented by the Sacramento District Engineer and the Central Valley Flood Protection Board, represented by its President and the State of California Department of Water Resources, represented by the Division Chief of Flood Management (hereinafter the "Non-Federal Sponsors").

WITNESSETH, THAT:

WHEREAS, the Corps of Engineers is authorized to conduct a feasibility study of Sacramento River Basin pursuant to Section 209 of the Flood Control Act of 1962 (Public Law 87-874) and of the San Joaquin River Basin pursuant to May 8, 1964 resolution of the House Committee on Public Works;

WHEREAS, prior to proceeding with such feasibility study, the U.S. Army Corps of Engineers conducted a reconnaissance study and determined that further planning in the nature of a feasibility study should proceed;

WHEREAS, the Government and the Non-federal sponsors desire to enter into an agreement (hereinafter the "Agreement") to conduct such feasibility study (hereinafter the "Study" as defined in Article I.A. of this Agreement);

WHEREAS, Section 105(a) of the Water Resources Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2215(a)), specifies the cost-sharing requirements applicable to the Study;

WHEREAS, the Non-Federal Sponsors desire to provide in-kind contributions (hereinafter the "*non-Federal in-kind contributions*" as defined in Article I.K. of this Agreement) that are necessary to prepare the feasibility report and to receive credit for such contributions toward the amount of their required contribution for the Study;

WHEREAS, the Non-Federal Sponsors may provide up to 100 percent of their required contribution for the Study as *non-Federal in-kind contributions*;

WHEREAS, the Government and Non-Federal Sponsors have the full authority and

capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the *Study* in accordance with the terms of this Agreement; and

WHEREAS, the Government and the Non-Federal Sponsors, in connection with this Agreement, desire to foster a partnering strategy and a working relationship between the Government and the Non-Federal Sponsors through a mutually developed formal strategy of commitment and communication embodied herein, which creates an environment where trust and teamwork prevent disputes, foster a cooperative bond between the Government and the Non-Federal Sponsors, and facilitate the successful *Study*.

NOW, THEREFORE, the Government and the Non-Federal Sponsors agree as follows:

ARTICLE I – DEFINITIONS

A. The term “*Study*” shall mean the activities and tasks required to identify and evaluate alternatives and the preparation of a decision document that, when appropriate, recommends a coordinated and implementable solution for an integrated watershed flood management plan to include water supply, ecosystem restoration, water quality and related activities for the Sacramento-San Joaquin River Basins including the Delta, Central Valley of California, as generally described in Sacramento and San Joaquin River Basins, California, Comprehensive Study, Interim Report, approved by Sacramento District on December 20, 2002. The term includes the *non-Federal in-kind contributions* described in paragraph K. of this Article.

B. The term “*total study costs*” shall mean the sum of all costs incurred by the Non-Federal Sponsors and the Government in accordance with the terms of this Agreement directly related to performance of the *Study*. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: the Government’s costs of plan formulation and evaluation, including applicable economic, engineering, real estate, and environmental analyses; the Government’s costs of preparation of the decision document for the *Study*; the costs of the *non-Federal in-kind contributions* determined in accordance with Article II.E. of this Agreement; the Government’s costs of independent technical review and other review processes required by the Government; the Government’s costs of external peer review, if required; the Government’s supervision and administration costs; the Non-Federal Sponsors’ and the Government’s costs of participation in the Study Coordination Team in accordance with Article III of this Agreement; the Government’s costs of contract dispute settlements or awards; and the Non-Federal Sponsors’ and the Government’s costs of audit in accordance with Article VI.B. and Article VI.C. of this Agreement. The term does not include any costs of dispute resolution under Article V of this Agreement; any costs incurred as part of reconnaissance studies; any costs incurred as part of feasibility studies under any other agreement; the Non-Federal Sponsors’ costs of negotiating this Agreement; or any costs of negotiating a design agreement for a project or separable element thereof.

C. The term “*study costs to be shared during the period of study*” shall mean the difference between *total study costs* and *excess study costs*.

D. The term "*excess study costs*" shall mean the difference between the most recent estimate of *total study costs* and the amount of *total study costs* specified in Article IV.A.1. of this Agreement, excluding any increase in *total study costs* that resulted from a change in Federal law or a change in the scope of the *Study* requested by the Non-Federal Sponsors or any increase in *total study costs* that otherwise was agreed upon in writing by the parties.

E. The term "*period of study*" shall mean the time from the effective date of this Agreement to the date that:

1. the Assistant Secretary of the Army (Civil Works) submits the feasibility report to the Office of Management and Budget (OMB) for review for consistency with policies and programs of the Administration, if the project or project modification that is the subject of this *Study* will require further Congressional authorization to implement the recommended plan; or

2. the decision document for the study is duly approved by the Government, if the project or project modification that is the subject of this *Study* will not require further Congressional authorization to implement the recommended plan; or

3. the date that this Agreement is terminated in accordance with Article IX of this Agreement.

F. The term "*financial obligations to be shared during the period of study*" shall mean the financial obligations of the Government and the costs for the *non-Federal in-kind contributions*, as determined by the Government, that result or would result in costs that are or would be included in *study costs to be shared during the period of study*.

G. The term "*non-Federal proportionate share*" shall mean the ratio of the sum of the costs included in *study costs to be shared during the period of study* for the *non-Federal in-kind contributions*, as determined by the Government, and the Non-Federal Sponsors' total contribution of funds required by Article II.C.1.b. of this Agreement to *financial obligations to be shared during the period of study*, as projected by the Government.

H. The term "*Federal program funds*" shall mean funds provided by a Federal agency, other than the Department of the Army, plus any non-Federal contribution required as a matching share therefor.

I. The term "*fiscal year*" shall mean one year beginning on October 1 and ending on September 30.

J. The term "*PMP*" shall mean the project management plan, and any modifications thereto, developed by the Government, and agreed to by the Non-Federal Sponsors, that specifies the scope, cost, and schedule for *Study* activities and guides the performance of the *Study* through the *period of study*.

K. The term "*non-Federal in-kind contributions*" shall mean planning, supervision and administration, services, materials, supplies, and other in-kind services that are performed or provided by the Non-Federal Sponsors after the effective date of this Agreement in accordance with the *PMP* and that are necessary for performance of the *Study*.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT AND THE NON-FEDERAL SPONSORS

A. The Government, subject to receiving funds appropriated by the Congress of the United States (hereinafter the "Congress") and using those funds and funds provided by the Non-Federal Sponsors, expeditiously shall conduct the *Study*, applying those procedures usually applied to Federal projects, in accordance with Federal laws, regulations, and policies. The Non-Federal Sponsors expeditiously shall perform or provide the *non-Federal in-kind contributions* in accordance with applicable Federal laws, regulations, and policies.

1. The Government shall not issue the solicitation for the first contract for the *Study* or commence the *Study* using the Government's own forces until the Non-Federal Sponsors has confirmed in writing its willingness to proceed with the *Study*.

2. To the extent possible, the Government and the Non-Federal Sponsors shall conduct the *Study* in accordance with the *PMP*.

3. The Government shall afford the Non-Federal Sponsors the opportunity to review and comment on all products that are developed by contract or by Government personnel during the *period of study*. The Government shall consider in good faith the comments of the Non-Federal Sponsors, but the final approval of all *Study* products shall be exclusively within the control of the Government.

4. The Government shall afford the Non-Federal Sponsors the opportunity to review and comment on the solicitations for all Government contracts, including relevant scopes of work, prior to the Government's issuance of such solicitations. To the extent possible, the Government shall afford the Non-Federal Sponsors the opportunity to review and comment on all proposed contract modifications, including change orders. In any instance where providing the Non-Federal Sponsors with notification of a contract modification is not possible prior to execution of the contract modification, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsors the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsors, but the contents of solicitations, award of contracts or commencement of work on the *Study* using the Government's own forces, execution of contract modifications, resolution of contract claims, and performance of all work on the *Study*, except for the *non-Federal in-kind contributions*, shall be exclusively within the control of the Government.

5. At the time the U.S. Army Engineer, Sacramento District (hereinafter the "District Engineer") furnishes the contractor with the Government's Written Notice of Acceptance of Completed Work for each contract awarded by the Government for the *Study*, the District Engineer shall furnish a copy thereof to the Non-Federal Sponsors.

6. The Non-Federal Sponsors shall afford the Government the opportunity to review and comment on the solicitations for all contracts for the *non-Federal in-kind contributions*, including relevant scopes of work, prior to the Non-Federal Sponsors' issuance of such solicitations. To the extent possible, the Non-Federal Sponsors shall afford the Government the opportunity to review and comment on all proposed contract modifications, including change orders. In any instance where providing the Government with notification of a contract modification is not possible prior to execution of the contract modification, the Non-Federal Sponsors shall provide such notification in writing at the earliest date possible. To the extent possible, the Non-Federal Sponsors also shall afford the Government the opportunity to review and comment on all contract claims prior to resolution thereof. The Non-Federal Sponsors shall consider in good faith the comments of the Government but the contents of solicitations, award of contracts or commencement of work on the *Study* using the Non-Federal Sponsors' own forces, execution of contract modifications, resolution of contract claims, and performance of all work on the *non-Federal in-kind contributions* shall be exclusively within the control of the Non-Federal Sponsors.

7. At the time the Non-Federal Sponsors furnishes a contractor with a notice of acceptance of completed work for each contract awarded by the Non-Federal Sponsors for the *non-Federal in-kind contributions*, the Non-Federal Sponsors shall furnish a copy thereof to the Government.

8. Notwithstanding paragraph A.4. and paragraph A.6., if the award of any contract for work on the *Study*, or continuation of work on the *Study* using the Government's or the Non-Federal Sponsors' own forces, would result in *excess study costs*, the Government and the Non-Federal Sponsors agree to defer award of that contract, award of all remaining contracts for work on the *Study*, and continuation of work on the *Study* using the Government's or the Non-Federal Sponsors' own forces until such time as the Government and the Non-Federal Sponsors agree in writing to proceed with further contract awards for the *Study* or the continuation of work on the *Study* using the Government's or the Non-Federal Sponsors' own forces, but in no event shall the award of contracts or the continuation of work on the *Study* using the Government's or the Non-Federal Sponsors' own forces be deferred for more than six months. If the Government and the Non-Federal Sponsors agree to not proceed or fail to reach agreement on proceeding with further contract awards for the *Study*, or the continuation of work on the *Study* using the Government's or the Non-Federal Sponsors' own forces, the parties shall terminate this Agreement and proceed in accordance with Article IX.D. of this Agreement.

9. As of the effective date of this Agreement, \$860,000 of Federal funds is currently projected to be available for the *Study*. The Government makes no commitment to request Congress to provide additional Federal funds for the *Study*. Further, the Government's

financial participation in the *Study* is limited to the Federal funds that the Government makes available to the *Study*.

B. The Government shall allocate *total study costs* between *study costs to be shared during the period of study* and *excess study costs*.

C. The Non-Federal Sponsors shall contribute 50 percent of *study costs to be shared during the period of study* in accordance with the provisions of this paragraph.

1. The Non-Federal Sponsors shall provide a contribution of funds as determined below:

a. If the Government projects at any time that the collective value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement will be less than the Non-Federal Sponsors' required share of 50 percent of *study costs to be shared during the period of study*, the Government shall determine the amount of funds that would be necessary to meet the Non-Federal Sponsors' required share prior to any consideration of the credit the Government projects will be afforded for the *non-Federal in-kind contributions* pursuant to paragraph F. of this Article.

b. The Non-Federal Sponsors shall provide funds in the amount determined by this paragraph in accordance with Article IV.B. of this Agreement. To determine the contribution of funds the Non-Federal Sponsors shall provide, the Government shall reduce the amount determined in accordance with paragraph C.1.a. of this Article by the amount of credit the Government projects will be afforded for the *non-Federal in-kind contributions* pursuant to paragraph F. of this Article.

2. The Government, subject to the availability of funds and as limited by paragraph G. of this Article, shall refund or reimburse to the Non-Federal Sponsors any contributions in excess of 50 percent of *study costs to be shared during the period of study* if the Government determines at any time that the collective value of the following contributions has exceeded 50 percent of *study costs to be shared during the period of study*: (a) the value of the Non-Federal Sponsors' contributions under paragraph C.1.b. of this Article; (b) the amount of credit to be afforded for the *non-Federal in-kind contributions* pursuant to paragraph F. of this Article; and (c) the value of the Non-Federal Sponsors' contributions under Article III and Article VI of this Agreement.

D. The Non-Federal Sponsors shall contribute 50 percent of *excess study costs* in accordance with the provisions of this paragraph.

1. The Government shall determine the amount of funds that would be necessary to meet the Non-Federal Sponsors' required share prior to any consideration of the credit the Government projects will be afforded for the *non-Federal in-kind contributions* pursuant to paragraph F. of this Article.

2. The Non-Federal Sponsors shall provide funds in the amount determined by

this paragraph in accordance with Article IV.C.3. of this Agreement. To determine the contribution of funds the Non-Federal Sponsors shall provide, the Government shall reduce the amount determined in accordance with paragraph D.1. of this Article by the amount of credit the Government projects will be afforded for the *non-Federal in-kind contributions* pursuant to paragraph F. of this Article .

E. The Government shall determine and include in *total study costs* any costs incurred by the Non-Federal Sponsors for *non-Federal in-kind contributions*, subject to the conditions and limitations of this paragraph. The Non-Federal Sponsors in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the amount of costs to be included in *total study costs* for *non-Federal in-kind contributions*.

1. Acceptance by the Government of *non-Federal in-kind contributions* shall be subject to a review by the Government to verify that all economic, engineering, real estate, and environmental analyses or other items performed or provided as *non-Federal in-kind contributions* are accomplished in a satisfactory manner and in accordance with applicable Federal laws, regulations, and policies, and to verify that all analyses, services, materials, supplies, and other in-kind services provided as *non-Federal in-kind contributions* are necessary for the *Study*.

2. The Non-Federal Sponsors' costs for *non-Federal in-kind contributions* that may be eligible for inclusion in *total study costs* pursuant to this Agreement shall be subject to an audit in accordance with Article VI.C. of this Agreement to determine the reasonableness, allocability, and allowability of such costs.

3. The Non-Federal Sponsors' costs for *non-Federal in-kind contributions* that may be eligible for inclusion in *total study costs* pursuant to this Agreement are not subject to interest charges, nor are they subject to adjustment to reflect changes in price levels between the time the *non-Federal in-kind contributions* are provided and the time the costs are included in *total study costs*.

4. The Government shall not include in *total study costs* any costs for *non-Federal in-kind contributions* paid by the Non-Federal Sponsors using *Federal program funds* unless the Federal agency providing the Federal portion of such funds verifies in writing that expenditure of such funds for such purpose is expressly authorized by Federal law.

5. The Government shall not include in *total study costs* any costs for *non-Federal in-kind contributions* in excess of the Government's estimate of the costs of the *non-Federal in-kind contributions* if the services, materials, supplies, and other in-kind services had been provided by the Government.

F. The Government, in accordance with this paragraph, shall afford credit toward the amount of funds determined in accordance with paragraph C.1.a. and paragraph D.1. of this Article for the costs of the *non-Federal in-kind contributions* determined in accordance with paragraph E. of this Article. The credit for *non-Federal in-kind contributions* first shall be

afforded toward the amount of funds determined in accordance with paragraph C.1.a. of this Article. If the amount of credit afforded exceeds the amount of funds determined in accordance with paragraph C.1.a. of this Article, the remaining portion of credit to be afforded shall be afforded toward the amount of funds determined in accordance with paragraph D.1. of this Article. However, the maximum amount of credit that can be afforded for the *non-Federal in-kind contributions* shall not exceed the least of the following amounts as determined by the Government: the amount of funds determined in accordance with paragraph C.1.a. and paragraph D.1. of this Article; the costs of the *non-Federal in-kind contributions* determined in accordance with paragraph E. of this Article; or 50 percent of *total study costs*.

G. Notwithstanding any other provision of this Agreement, the Non-Federal Sponsors shall not be entitled to reimbursement of any costs of *non-Federal in-kind contributions* determined in accordance with paragraph E. of this Article and included in *total study costs* that exceed the amount of credit afforded for the *non-Federal in-kind contributions* determined in accordance with paragraph F. of this Article and the Non-Federal Sponsors shall be responsible for 100 percent of all costs of *non-Federal in-kind contributions* included in *total study costs* that exceed the amount of credit afforded.

H. Upon conclusion of the *period of study*, the Government shall conduct an accounting, in accordance with Article IV.C. of this Agreement, and furnish the results to the Non-Federal Sponsors.

I. The Non-Federal Sponsors shall not use *Federal program funds* to meet any of its obligations for the *Study* under this Agreement unless the Federal agency providing the Federal portion of such funds verifies in writing that expenditure of such funds for such purpose is expressly authorized by Federal law.

J. This Agreement shall not be construed as obligating either party to implement a project. Whether the Government supports a project authorization, if authorization is required, and budgets for implementation of the project depends upon, among other things, the outcome of the *Study* and whether the proposed solution is consistent with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and with the budget priorities of the Administration.

ARTICLE III - STUDY COORDINATION TEAM

A. To provide for consistent and effective communication, the Non-Federal Sponsors and the Government, not later than 30 calendar days after the effective date of this Agreement, shall appoint named senior representatives to a Study Coordination Team. Thereafter, the Study Coordination Team shall meet regularly until the end of the *period of study*. The Government's Project Manager and a counterpart named by the Non-Federal Sponsors shall co-chair the Study Coordination Team.

B. The Government's Project Manager and the Non-Federal Sponsors' counterpart shall

keep the Study Coordination Team informed of the progress of the *Study* and of significant pending issues and actions, and shall seek the views of the Study Coordination Team on matters that the Study Coordination Team generally oversees.

C. Until the end of the *period of study*, the Study Coordination Team shall generally oversee the *Study*, including matters related to: plan formulation and evaluation, including applicable economic, engineering, real estate, and environmental analyses; scheduling of reports and work products; independent technical review and other review processes required by the Government; external peer review, if required; completion of all necessary environmental coordination and documentation; contract awards and modifications; contract costs; the Government's cost projections; the performance of and scheduling for the *non-Federal in-kind contributions*; determination of anticipated future requirements for real property and relocation requirements and performance of operation, maintenance, repair, rehabilitation, and replacement of the proposed project including anticipated requirements for permits; and other matters related to the *Study*. This oversight of the *Study* shall be consistent with the *PMP*.

D. The Study Coordination Team may make recommendations to the District Engineer on matters related to the *Study* that the Study Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Study Coordination Team. The Government, having the legal authority and responsibility for performance of the *Study* except for the *non-Federal in-kind contributions*, has the discretion to accept or reject, in whole or in part, the Study Coordination Team's recommendations. On matters related to the *non-Federal in-kind contributions*, that the Study Coordination Team generally oversees, the Study Coordination Team may make recommendations to the Non-Federal Sponsors including suggestions to avoid potential sources of dispute. The Non-Federal Sponsors in good faith shall consider the recommendations of the Study Coordination Team. The Non-Federal Sponsors, having the legal authority and responsibility for the *non-Federal in-kind contributions*, has the discretion to accept or reject, in whole or in part, the Study Coordination Team's recommendations except as otherwise required by the provisions of this Agreement, including compliance with applicable Federal, State, or local laws or regulations.

E. The Non-Federal Sponsors' costs of participation in the Study Coordination Team shall be included in *total study costs* and shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article VI.C. of this Agreement to determine reasonableness, allocability, and allowability of such costs. The Government's costs of participation in the Study Coordination Team shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

ARTICLE IV - METHOD OF PAYMENT

A. In accordance with the provisions of this paragraph, the Government shall maintain current records and provide to the Non-Federal Sponsors current projections of costs, financial obligations, the contributions provided by the parties, the costs included in *total study costs* for

the *non-Federal in-kind contributions* determined in accordance with Article II.E. of this Agreement, and the credit to be afforded for the *non-Federal in-kind contributions* pursuant to Article II.F. of this Agreement.

1. As of the effective date of this Agreement, *total study costs* are projected to be \$1,720,000; the amount of funds determined in accordance with Article II.C.1.a. of this Agreement is projected to be \$860,000; the costs included in *total study costs* for the *non-Federal in-kind contributions* determined in accordance with Article II.E. of this Agreement are projected to be \$860,000; the credit to be afforded for the *non-Federal in-kind contributions* pursuant to Article II.F. of this Agreement is projected to be \$860,000; the Non-Federal Sponsors' contribution of funds required by Article II.C.1.b. of this Agreement is projected to be \$0; and the *non-Federal proportionate share* is projected to be 50 percent. These amounts and percentage are estimates subject to adjustment by the Government, after consultation with the Non-Federal Sponsors, and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsors.

2. By December 2010 and by each quarterly anniversary thereof until the conclusion of the *period of study* and resolution of all relevant claims and appeals, the Government shall provide the Non-Federal Sponsors with a report setting forth all contributions provided to date and the current projections of the following: *total study costs*; *study costs to be shared during the period of study*; the amount of funds determined in accordance with Article II.C.1.a. of this Agreement; the Non-Federal Sponsors' contribution of funds required by Article II.C.1.b. of this Agreement; *excess study costs*; the amount of funds determined in accordance with Article II.D.1. of this Agreement; the Non-Federal Sponsors' contribution of funds required by Article II.D.2. of this Agreement; the costs included in *total study costs* for the *non-Federal in-kind contributions* determined in accordance with Article II.E. of this Agreement; the credit to be afforded for the *non-Federal in-kind contributions* pursuant to Article II.F. of this Agreement; and the *non-Federal proportionate share*.

B. The Non-Federal Sponsors shall provide the contribution of funds required by Article II.C.1.b. of this Agreement in accordance with the provisions of this paragraph.

1. Not less than 60 calendar days prior to the scheduled date for issuance of the solicitation for the first contract for work on the *Study* or commencement of work on the *Study* using the Government's own forces, the Government shall notify the Non-Federal Sponsors in writing of such scheduled date and the funds the Government determines to be required from the Non-Federal Sponsors to meet: (a) the *non-Federal proportionate share of financial obligations to be shared during the period of study* incurred prior to the commencement of the *period of study*; (b) the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* to be incurred for such contract; and (c) the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* using the Government's own forces through the first quarter. Not later than such scheduled date, the Non-Federal Sponsors shall provide the Government with the full amount of such required funds by delivering a check payable to "FAO, USAED, Sacramento District" to the District Engineer, or verifying to the satisfaction of the Government that the Non-Federal Sponsors has deposited such

required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsors, or by presenting the Government with an irrevocable letter of credit acceptable to the Government for such required funds, or by providing an Electronic Funds Transfer of such required funds in accordance with procedures established by the Government.

2. Thereafter, until the work on the *Study* is complete, the Government shall notify the Non-Federal Sponsors in writing of the funds the Government determines to be required from the Non-Federal Sponsors, and the Non-Federal Sponsors shall provide such funds in accordance with the provisions of this paragraph.

a. The Government shall notify the Non-Federal Sponsors in writing, no later than 60 calendar days prior to the scheduled date for issuance of the solicitation for each remaining contract for work on the *Study*, of the funds the Government determines to be required from the Non-Federal Sponsors to meet the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* to be incurred for such contract. No later than such scheduled date, the Non-Federal Sponsors shall make the full amount of such required funds available to the Government through any of the payment mechanisms specified in paragraph B.1. of this Article.

b. The Government shall notify the Non-Federal Sponsors in writing, no later than 60 calendar days prior to the beginning of each quarter in which the Government projects that it will make *financial obligations to be shared during the period of study* using the Government's own forces, of the funds the Government determines to be required from the Non-Federal Sponsors to meet the projected *non-Federal proportionate share of financial obligations to be shared during the period of study* using the Government's own forces for that *fiscal year*. No later than 30 calendar days prior to the beginning of that quarter, the Non-Federal Sponsors shall make the full amount of such required funds for that quarter available to the Government through any of the payment mechanisms specified in paragraph B.1. of this Article.

3. The Government shall draw from the funds provided by the Non-Federal Sponsors such sums as the Government deems necessary, when considered with any credit the Government projects will be afforded for the *non-Federal in-kind contributions* pursuant to Article II.F. of this Agreement, to cover: (a) the *non-Federal proportionate share of financial obligations to be shared during the period of study* incurred prior to the commencement of the *period of study*; and (b) the *non-Federal proportionate share of financial obligations to be shared during the period of study* as *financial obligations to be shared during the period of study* are incurred. If at any time the Government determines that additional funds will be needed from the Non-Federal Sponsors to cover the Non-Federal Sponsors' share of such financial obligations for the current contract or to cover the Non-Federal Sponsors' share of such financial obligations for work performed using the Government's own forces in the current quarter, the Government shall notify the Non-Federal Sponsors in writing of the additional funds required and provide an explanation of why additional funds are required. Within 60 calendar days from receipt of such notice, the Non-Federal Sponsors shall provide the Government with the full amount of such additional required funds through any of the payment mechanisms specified in

paragraph B.1. of this Article.

C. Upon conclusion of the *period of study* and resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish the Non-Federal Sponsors with written notice of the results of such final accounting. If outstanding relevant claims and appeals prevent a final accounting from being conducted in a timely manner, the Government shall conduct an interim accounting and furnish the Non-Federal Sponsors with written notice of the results of such interim accounting. Once all outstanding relevant claims and appeals are resolved, the Government shall amend the interim accounting to complete the final accounting and furnish the Non-Federal Sponsors with written notice of the results of such final accounting. The interim or final accounting, as applicable, shall determine *total study costs*, *study costs to be shared during the period of study*, and *excess study costs*. In addition, the interim or final accounting, as applicable, shall determine each party's required share thereof, and each party's total contributions thereto as of the date of such accounting.

1. Should the interim or final accounting, as applicable, show that the Non-Federal Sponsors' total required share of *study costs to be shared during the period of study* exceeds the Non-Federal Sponsors' total contributions provided thereto, the Non-Federal Sponsors, no later than 90 calendar days after receipt of written notice from the Government, shall make a payment to the Government in an amount equal to the difference by delivering a check payable to "FAO, USAED, Sacramento District" to the District Engineer or by providing an Electronic Funds Transfer in accordance with procedures established by the Government.

2. Should the interim or final accounting, as applicable, show that the total contributions provided by the Non-Federal Sponsors for *study costs to be shared during the period of study* exceed the Non-Federal Sponsors' total required share thereof, the Government, subject to the availability of funds and as limited by Article II.G. of this Agreement, shall refund or reimburse the excess amount to the Non-Federal Sponsors within 90 calendar days of the date of completion of such accounting. In the event the Non-Federal Sponsors is due a refund or reimbursement and funds are not available to refund or reimburse the excess amount to the Non-Federal Sponsors, the Government shall seek such appropriations as are necessary to make the refund or reimbursement.

3. Should the final accounting show that the Non-Federal Sponsors' total required share of *excess study costs* exceeds the Non-Federal Sponsors' total contributions provided thereto the Non-Federal Sponsors, within the applicable time frame described below, shall make a payment to the Government in an amount equal to the difference by delivering a check payable to "FAO, USAED, Sacramento District" to the District Engineer or by providing an Electronic Funds Transfer in accordance with procedures established by the Government.

a. If the project or project modification that is the subject of this *Study* will require further Congressional authorization to implement the recommended plan and:

i. the project or project modification is authorized for construction

then the payment shall be made no later than the date on which a Project Cooperation Agreement is entered into for the project or project modification; or

ii. the project or project modification is not authorized for construction within 5 years after the date of the final Report of the Chief of Engineers concerning the project or project modification - then the payment shall be made no later than 5 years after the date of the final Report of the Chief of Engineers; or

iii. the *Study* is terminated and the project or project modification is not authorized for construction - then the payment shall be made no later than 2 years after such termination date.

b. If the project or project modification that is the subject of this *Study* will not require further Congressional authorization to implement the recommended plan, then the payment shall be made:

i. no later than the date on which a Project Cooperation Agreement is entered into for the project or project modification; or

ii. no later than 5 years after the date the decision document is duly approved by the Government; or

iii. no later than 2 years after the date of the termination of the *Study*, whichever is earliest.

ARTICLE V - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. Each party shall pay an equal share of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

ARTICLE VI - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsors shall develop procedures for keeping books, records, documents, or other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and

Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The Government and the Non-Federal Sponsors shall maintain such books, records, documents, or other evidence in accordance with these procedures and for a minimum of three years after completion of the accounting for which such books, records, documents, or other evidence were required. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsors shall each allow the other to inspect such books, records, documents, or other evidence.

B. In accordance with 32 C.F.R. Section 33.26, the Non-Federal Sponsors is responsible for complying with the Single Audit Act Amendments of 1996 (31 U.S.C. 7501-7507), as implemented by OMB Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsors and to the extent permitted under applicable Federal laws and regulations, the Government shall provide to the Non-Federal Sponsors and independent auditors any information necessary to enable an audit of the Non-Federal Sponsors' activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the *Study* shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsors is required to conduct under the Single Audit Act Amendments of 1996. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in *total study costs* and shared in accordance with the provisions of this Agreement.

ARTICLE VII - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsors and the Government shall comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto and Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army".

ARTICLE VIII - RELATIONSHIP OF PARTIES

A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsors each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.

B. In the exercise of its rights and obligations under this Agreement, neither party shall

provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights the other party may have to seek relief or redress against that contractor either pursuant to any cause of action that the other party may have or for violation of any law.

ARTICLE IX - TERMINATION OR SUSPENSION

A. Prior to conclusion of the *period of study*, upon 30 calendar days written notice to the other party, either party may elect without penalty to terminate this Agreement or to suspend future performance under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until either the Government or the Non-Federal Sponsors elects to terminate this Agreement.

B. If at any time the Non-Federal Sponsors fails to fulfill its obligations under this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless he determines that continuation of performance of the *Study* is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the *Study*.

C. In the event the Government projects that the amount of Federal funds the Government will make available to the *Study* through the then-current *fiscal year*, or the amount of Federal funds the Government will make available for the *Study* through the upcoming *fiscal year*, is not sufficient to meet the Federal share of *total study costs* that the Government projects to be incurred through the then-current or upcoming *fiscal year*, as applicable, the Government shall notify the Non-Federal Sponsors in writing of such insufficiency of funds and of the date the Government projects that the Federal funds that will have been made available to the *Study* will be exhausted. Upon the exhaustion of Federal funds made available by the Government to the *Study*, future performance under this Agreement shall be suspended. Such suspension shall remain in effect until such time that the Government notifies the Non-Federal Sponsors in writing that sufficient Federal funds are available to meet the Federal share of *total study costs* the Government projects to be incurred through the then-current or upcoming *fiscal year*, or the Government or the Non-Federal Sponsors elects to terminate this Agreement.

D. In the event that one or more of the Non-Federal Sponsors elects to terminate its responsibilities under this Agreement, and the remaining Non-Federal Sponsors elects to continue to participate in the *Study*, the Government shall negotiate in good faith with the remaining Non-Federal Sponsors to effect a timely and productive conclusion to that portion of the *Study* pertaining to the area of statutory authority applicable for the remaining Non-Federal Sponsors. The Government shall prepare a revised *PMP* and revised estimate of *total study costs* to complete that portion of the *Study* of interest to the remaining Non-Federal Sponsors. If the remaining Non-Federal Sponsors elects to complete the *Study*, this Agreement shall be amended to reflect the negotiated revisions to the scope of the *Study* defined in Article I.A. of this Agreement and the estimate of *total study costs* in Article IV.A.1. of this Agreement. Amendments to this Agreement made pursuant to this paragraph shall reflect credits for the contribution of funds and *non-Federal in-kind contributions* provided previously by all of the

Study sponsors and shall reflect task reductions made as a result of withdrawal of any *Study* sponsor.

E. In the event that this Agreement is terminated pursuant to this Article, the parties shall conclude their activities relating to the *Study* and conduct an accounting in accordance with Article IV.C. of this Agreement. To provide for this eventuality, the Government may reserve a percentage of total Federal funds made available for the *Study* and an equal percentage of the total funds contributed by the Non-Federal Sponsors in accordance with Article II.C.1.b. of this Agreement as a contingency to pay costs of termination, including any costs of resolution of contract claims and contract modifications. Upon termination of this Agreement, all data and information generated as part of the *Study* shall be made available to the parties to the Agreement.

F. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment owed by the Non-Federal Sponsors shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13 week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3 month period if the period of delinquency exceeds 3 months.

ARTICLE X - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally or sent by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsors:
Central Valley Flood Protection Board
Attn: Executive Officer
3310 El Camino Avenue
Room 160
Sacramento, CA 95821

Department of Water Resource
Attn: Chief, Division of Flood Management
P.O. Box 942836
Sacramento, CA 94236

Sacramento, CA 95

If to the Government:
US Army Corps of Engineers, Sacramento District
Attn: CESPK-PM-C

1325 J Street
Sacramento, CA 95814

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

ARTICLE XI - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XII - THIRD PARTY RIGHTS, BENEFITS, OR LIABILITIES

Nothing in this Agreement is intended, nor may be construed, to create any rights, confer any benefits, or relieve any liability, of any kind whatsoever in any third person not party to this Agreement.

ARTICLE XIII - OBLIGATIONS OF FUTURE APPROPRIATIONS

A. Nothing herein shall constitute, nor be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California.

B. The Non-Federal Sponsors intends to fulfill their obligations under this Agreement. The Non-Federal Sponsors shall include in their budget request or otherwise propose appropriations of funds in amounts sufficient to fulfill these obligations for that year, and shall use all reasonable and lawful means to secure those appropriations. The Non-Federal Sponsors reasonably believes that funds in amounts sufficient to fulfill these obligations lawfully can and will be appropriated and made available for this purpose. In the event funds are not appropriated in amounts sufficient to fulfill these obligations, the Non-Federal Sponsors shall use their best efforts to satisfy any requirements for payments or contributions of funds under this Agreement from any other source of funds legally available for this purpose. Further, if the Non-Federal Sponsors are unable to fulfill these obligations, the Government may exercise any legal rights it has to protect the Government's interests related to this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, which shall become effective upon the date it is signed by the.

DEPARTMENT OF THE ARMY

CENTRAL VALLEY FLOOD

PROTECTION BOARD

BY: 
Thomas C. Chapman
Colonel, U.S. Army
District Engineer

BY: 
Benjamin F. Carter, President
Central Valley Flood Protection Board

DATE: 21 Jul 10

DATE: 6/25/10

CALIFORNIA STATE DEPARTMENT
OF WATER RESOURCES

BY: 
Gary Barklin
Chief, Division of Flood Management
Department of Water Management

CERTIFICATE OF AUTHORITY

I, Ward Tabor, do hereby certify that I am the Assistant Chief Counsel for the State of California Department of Water Resources, that the State of California Department of Water Resources is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the State of California Department of Water Resources in connection with the feasibility study for the Central Valley Integrated Flood Management Study, and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement and that the persons who have executed this Agreement on behalf of the State of California Department of Water Resources have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
8th day of July 20 10



Ward Tabor
Counsel for
The State of California
Department of Water Resources

CERTIFICATION REGARDING LOBBYING

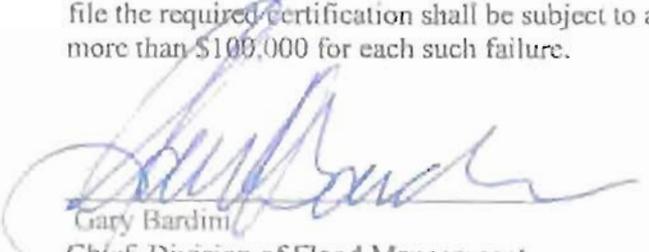
The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-L.I.F., "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.


Gary Bardim
Chief, Division of Flood Management
State of California Department of Water Resources

DATE: 7/15/10

CERTIFICATE OF AUTHORITY

I, Deborah M. Smith the undersigned, do hereby certify that I am the principal legal officer of the Central Valley Flood Protection Board, a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the Central Valley Flood Protection Board in connection with the feasibility study for the Central Valley Integrated Flood Management Study and to pay damages, if necessary, in the event of the failure to perform in accordance with the terms of this Agreement, and that the persons who have executed this Agreement on behalf of the Central Valley Flood Protection Board have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
8th day of July 2010.

By 
Deborah Smith, Deputy Attorney General
Attorney for the Central Valley
Flood Protection Board

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-L.L.L., "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



Benjamin F. Carter, President
Central Valley Flood Protection Board

DATE: 6/25/10

**NON-FEDERAL SPONSOR'S
SELF-CERTIFICATION OF FINANCIAL CAPABILITY
FOR AGREEMENTS**

I, Eric Koch, do hereby certify that I am the Chief of the FloodSAFE Program Management Office for the State of California, Department of Water Resources (a "Non-Federal Sponsor"); that I am aware of the financial obligations of the Non-Federal Sponsor for the Central Valley Integrated Flood Management Study; and that the Non-Federal Sponsor has the financial capability to satisfy the Non-Federal Sponsor's obligations under the Agreement between the Department of the Army and the Central Valley Flood Protection Board and the State of California Department of Water Resources for the Central Valley Integrated Flood Management Study.

IN WITNESS WHEREOF, I have made and executed this certification this 7th
day of June, 2020.

BY: Eric Koch
TITLE: Chief, FloodSAFE Program Management
DATE: 6/7/2020

**NON-FEDERAL SPONSOR'S
SELF-CERTIFICATION OF FINANCIAL CAPABILITY
FOR AGREEMENTS**

I, Jay Punia, do hereby certify that I am the Executive Officer of the Central Valley Flood Protection Board (a "Non-Federal Sponsor"); that I am aware of the financial obligations of the Non-Federal Sponsor for the Central Valley Integrated Flood Management Study; and that the Non-Federal Sponsor has the financial capability to satisfy the Non-Federal Sponsor's obligations under the Agreement between the Department of the Army and the Central Valley Flood Protection Board and the State of California Department of Water Resources for the Central Valley Integrated Flood Management Study.

IN WITNESS WHEREOF, I have made and executed this certification this 16 day of July, 2013.

BY: Jay Punia
TITLE: Executive Officer
DATE: July 16, 2013

REPLY IN
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

MAY 10 2010

CESPK-PM-C

MEMORANDUM FOR Commander, South Pacific Division

SUBJECT: Standard Feasibility Cost Share Agreement (FCSA) for the Central Valley Integrated Flood Management Study, California (Project Number Work Item 154612).

This is to notify you that the District intends to execute the standard FCSA for the Central Valley Integrated Flood Management Study, California. The non-Federal partners, the Flood Protection Board of the State of California and the State Department of Water Resources, have reviewed the standard FCSA and are satisfied that it meets their needs. Please find enclosed:

- Standard Feasibility Cost Share Agreement (Enclosure A);
- Feasibility Cost Share Agreement Checklist (Enclosure B);
- Federal/non-Federal funds allocation table (Enclosure C);
- Certification of Legal Review (Enclosure D);
- Letter of intent from the Non-Federal sponsor (Enclosure E).

For your information I have also attached the draft Project Management Plan. This PMP is currently being routed through the District offices for final signatures both PPMD and Planning have signed off on the PMP.

Please provide approval to send this agreement to the non-Federal sponsor to execute the agreement and to delegate the authority to sign the agreement to the District Engineer.

If you have any question or comments please contact the Project Manager, Tom Karvonen at 916-557-7630.

Encls


Kris Mullins, P.M.P.
Deputy for Project Management

Non-Fed and Fed Allocation Table for
The Central Valley Intergraded Flood Management Study

Year	Total Project Cost (TPC)	Schedule Expenditures	% TPC	Non-Fed Cash or work-in-kind	Fed Cash
2009			0.00%		
2010		\$1,600,000	93.0%	\$800,000	\$800,000
2011		\$120,000	7.0%	\$60,000	\$60,000
Total	\$1,720,000	\$1,720,000	100.00%	\$860,000	\$860,000

CERTIFICATION OF LEGAL REVIEW
OF THE
AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CENTRAL VALLEY FLOOD PROTECTION BOARD
AND
THE STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES
FOR THE
CENTRAL VALLEY INTEGRATED FLOOD MANAGEMENT STUDY

The Agreement Between the Department of the Army and the Central Valley Flood Protection Board and the State of California Department of Water Resources for the Central Valley Integrated Flood Management Study has been fully reviewed by the Office of Counsel, Sacramento District, and is approved as legally sufficient.


Susan Azyndar
Assistant District Counsel

Date

**PROJECT: Central Valley Integrated Flood Management Study –
FCSA Amendment No. 1**

7. USACE CVIFMS INFORMATION SHEET



**US Army Corps
of Engineers**®
Sacramento District

Central Valley Integrated Flood Management Study

The U.S. Army Corps of Engineers (Corps), in conjunction with their non-Federal sponsor, the California Department of Water Resources (DWR), will jointly implement the Central Valley Integrated Flood Management Study (CVIFMS). The CVIFMS will define a long-range program for the Sacramento and San Joaquin River Basins and the corresponding level of Federal participation. This program will identify opportunities to reduce flood risk by improving the flood capacity of the system while restoring and protecting floodplain and environmental features including wetlands and other fish and wildlife habitat.

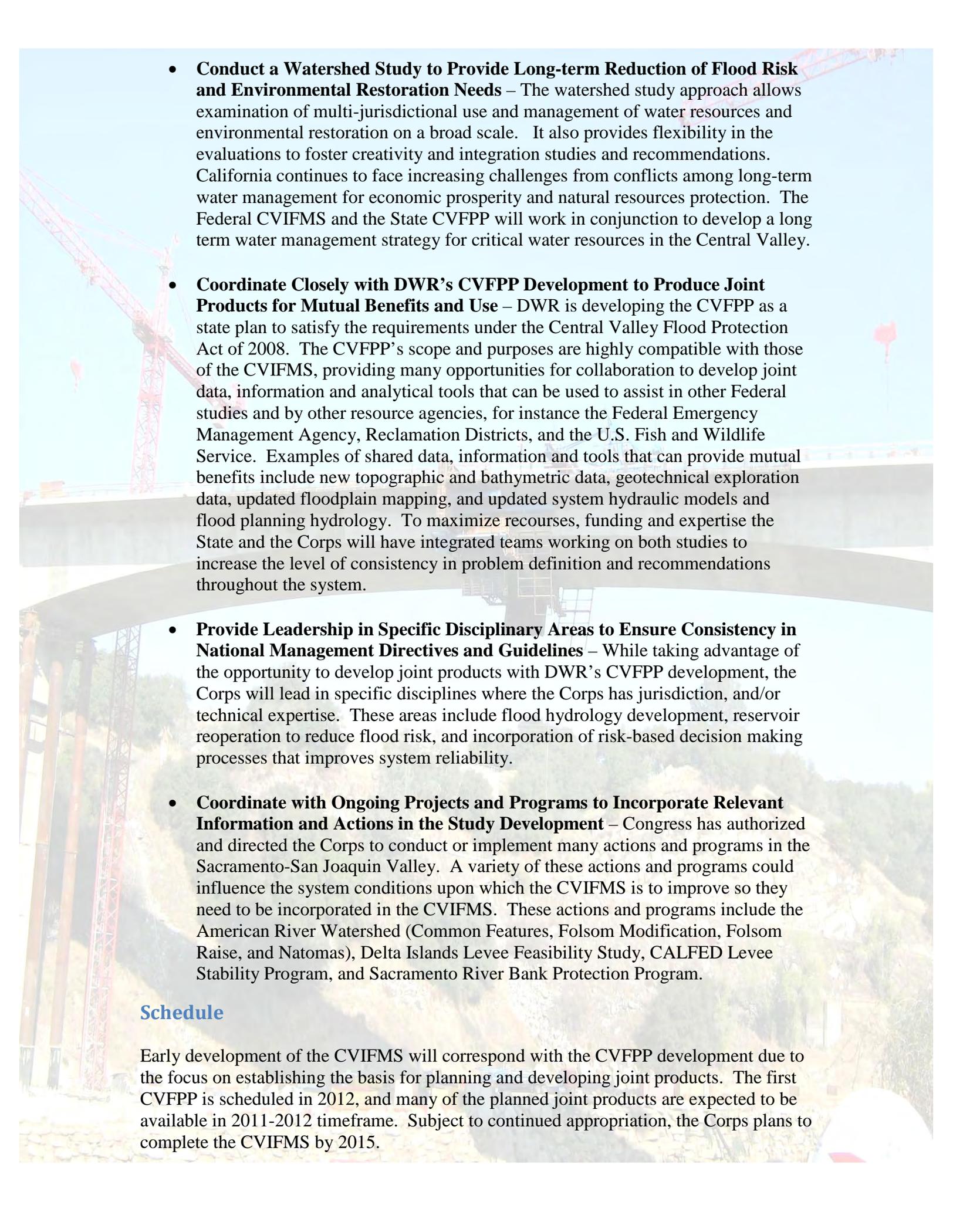
Study Background and Authorization

The CVIFMS is a continuation of the Sacramento and San Joaquin River Basins Comprehensive Study (Comp Study). The Comp Study and the CVIFMS are authorized by the Flood Control Act of 1962, Public Law 87-874 (Sacramento River Basin), the 1964 Congressional Resolution of the House Committee on Public Works (San Joaquin River Basin), and House Report 105-190 on the 1998 Energy and Water Development Appropriations Bill. The Comp Study team completed a Post-Flood Assessment in 1998 and an Interim Report in 2002 to document the interim findings of flood and related problems, potential measures, and recommended principles for future study phases.

Building on the Comp Study's work, the CVIFMS is being conducted in coordination with DWR under the department's new authorization from the Central Valley Flood Protection Act of 2008. This Act requires DWR to develop a Central Valley Flood Protection Plan (CVFPP), which must be adopted by the Central Valley Flood Protection Board in 2012, and updated every five years. A major purpose of the CVFPP is to develop a sustainable, integrated flood risk reduction plan for areas protected by Federal-State flood protection system in the Sacramento-San Joaquin Valley.

Renewed Study Framework for the Challenges

The CVIFMS has the broadest scope (to include long term analysis and planning of flood damage reduction and/or environmental restoration throughout the Sacramento-San Joaquin Valley) of any congressionally authorized project in California. DWR's authorization under the Central Valley Flood Protection Act of 2008, although similar, requires a different study framework. Therefore, in coordination with DWR, the Corps is formulating detailed approach and management strategies for the CVIFMS, such as:

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- **Conduct a Watershed Study to Provide Long-term Reduction of Flood Risk and Environmental Restoration Needs** – The watershed study approach allows examination of multi-jurisdictional use and management of water resources and environmental restoration on a broad scale. It also provides flexibility in the evaluations to foster creativity and integration studies and recommendations. California continues to face increasing challenges from conflicts among long-term water management for economic prosperity and natural resources protection. The Federal CVIFMS and the State CVFPP will work in conjunction to develop a long term water management strategy for critical water resources in the Central Valley.
 - **Coordinate Closely with DWR’s CVFPP Development to Produce Joint Products for Mutual Benefits and Use** – DWR is developing the CVFPP as a state plan to satisfy the requirements under the Central Valley Flood Protection Act of 2008. The CVFPP’s scope and purposes are highly compatible with those of the CVIFMS, providing many opportunities for collaboration to develop joint data, information and analytical tools that can be used to assist in other Federal studies and by other resource agencies, for instance the Federal Emergency Management Agency, Reclamation Districts, and the U.S. Fish and Wildlife Service. Examples of shared data, information and tools that can provide mutual benefits include new topographic and bathymetric data, geotechnical exploration data, updated floodplain mapping, and updated system hydraulic models and flood planning hydrology. To maximize resources, funding and expertise the State and the Corps will have integrated teams working on both studies to increase the level of consistency in problem definition and recommendations throughout the system.
 - **Provide Leadership in Specific Disciplinary Areas to Ensure Consistency in National Management Directives and Guidelines** – While taking advantage of the opportunity to develop joint products with DWR’s CVFPP development, the Corps will lead in specific disciplines where the Corps has jurisdiction, and/or technical expertise. These areas include flood hydrology development, reservoir reoperation to reduce flood risk, and incorporation of risk-based decision making processes that improves system reliability.
 - **Coordinate with Ongoing Projects and Programs to Incorporate Relevant Information and Actions in the Study Development** – Congress has authorized and directed the Corps to conduct or implement many actions and programs in the Sacramento-San Joaquin Valley. A variety of these actions and programs could influence the system conditions upon which the CVIFMS is to improve so they need to be incorporated in the CVIFMS. These actions and programs include the American River Watershed (Common Features, Folsom Modification, Folsom Raise, and Natomas), Delta Islands Levee Feasibility Study, CALFED Levee Stability Program, and Sacramento River Bank Protection Program.

Schedule

Early development of the CVIFMS will correspond with the CVFPP development due to the focus on establishing the basis for planning and developing joint products. The first CVFPP is scheduled in 2012, and many of the planned joint products are expected to be available in 2011-2012 timeframe. Subject to continued appropriation, the Corps plans to complete the CVIFMS by 2015.