



Central Valley Flood Protection Plan

Interim Progress Summary No. 1

Regional Conditions, Problems and Opportunities, Goals, and Principles



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PURPOSE

The Central Valley Flood Protection Plan (CVFPP) will be a sustainable,¹ **integrated flood management** plan that the California Department of Water Resources (DWR) is required to prepare by January 1, 2012, for adoption by the Central Valley Flood Protection Board (Board) by July 1, 2012. The purpose of this Interim Progress Summary No. 1 is to describe progress to date and present interim findings. This summary includes the following:

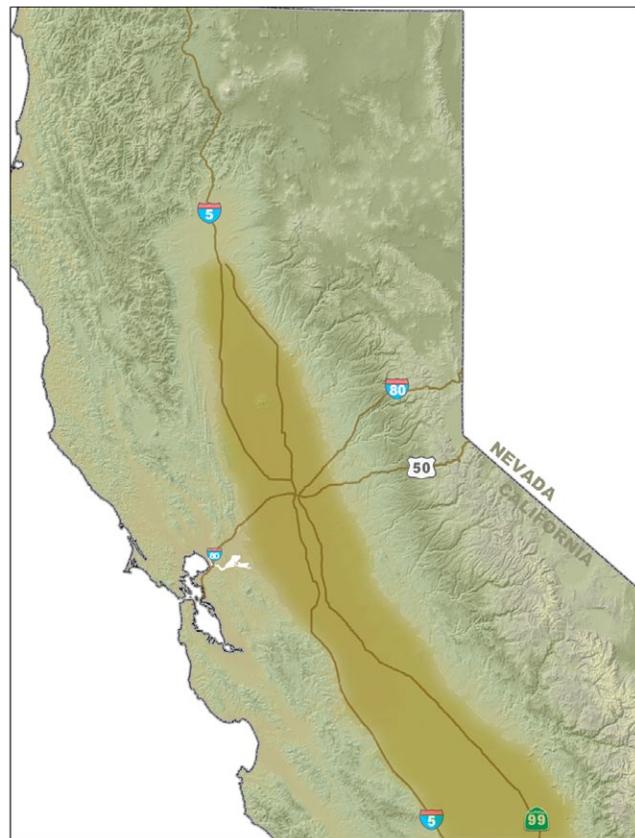
- Information on authorizing legislation for the CVFPP and its relationship to FloodSAFE California (FloodSAFE).
- Descriptions of the 2012 CVFPP development process, geographic areas for planning and analysis, and milestone documents.
- Summaries of interim findings on regional conditions, flood risk and related problems and opportunities, draft planning goals and principles, and work toward initial objectives.
- Assessment of the level of agreement among participants, and areas for improvement based on key lessons learned during planning efforts to date.
- Next steps in the CVFPP development process and how to get involved.

Integrated flood management is an approach to flood risk that recognizes the interconnection of flood management actions within broader water resources management and land-use planning; the value of coordinating across geographic and agency boundaries; the need to evaluate opportunities and potential impacts from a system perspective; and the importance of environmental stewardship and sustainability (DWR, draft FloodSAFE Strategic Plan, June 2008)

BACKGROUND

Major flooding throughout the Central Valley of California has been documented since the mid-1800s, and has prompted numerous efforts by local, State, and federal entities to address this threat. These efforts have resulted in the construction of a large, functioning system of flood management features along the Sacramento and San Joaquin rivers and tributaries. Despite these efforts, damages from flooding have increased over time because land uses and populations within the floodplains have changed. Even with these changes, damages are much less than they would have been without the existing system. Flood damages in February 1986, January 1995, and January 1997 were the highest on record, shedding light on the susceptibility of the Central Valley and its growing communities to catastrophic flooding.

DWR launched the FloodSAFE California initiative in January 2005 to address Governor Schwarzenegger's call for improved maintenance, system rehabilitation, effective emergency response, and sustainable funding. The devastation and loss of life in New Orleans and along the Gulf Coast resulting from hurricanes Katrina and Rita in 2005 further raised public awareness of the potential for catastrophic storm events throughout the



¹ A project is considered "sustainable" when it is socially, environmentally, and financially feasible for an enduring period.

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 \$5 billion in State funding for flood risk management and related improvements. In fall 2007, the California Legislature passed five inter-related bills aimed at addressing the problems of flood protection and flood damage liability. Collectively, the 2007 flood legislation, including Senate Bills 5 and 17, and Assembly Bills 5, 70, and 156, directs use of the bond funds to increase levels of urban protection and address flood liability. This flood legislation outlines a comprehensive approach to improving flood management at the State and local levels, with elements to address both the chance of flooding, and the consequences when flooding does occur.

Authority and Guidance

Primary authorization for the CVFPP originates in Senate Bill 5, also known as the Central Valley Flood Protection Act of 2008.² In addition, Propositions 1E and 84 provide both specific and general authority for related State flood management efforts. Assembly Bill 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



Yolo Bypass



the California Government Code, Health and Safety Code, Public Resources Code, and California Water Code (CWC)³, and included specific requirements for developing the CVFPP.

FloodSAFE California

The CVFPP is being prepared under FloodSAFE, which is a multifaceted initiative to improve integrated flood management in the State using a systemwide approach, while carrying out regional projects and enhancing DWR's core flood management programs. The FloodSAFE Vision is as follows:

A sustainable integrated flood management and emergency response system throughout California that improves public safety, protects and enhances environmental and cultural resources, and supports economic growth by reducing the probability of destructive floods, promoting beneficial floodplain processes, and lowering the damages caused by flooding.

² More detailed information on authority and guidance is included in Chapter 1 of the draft *Regional Conditions Report – A Working Document* (DWR, April 2010).

³ Relevant code sections are highlighted in the *2007 Flood Legislation Summary* and *2007 Flood Legislation Companion Reference*, available at <http://www.water.ca.gov/legislation/>.

Five broad goals were established to realize this vision, providing overarching guidance to all FloodSAFE efforts, including preparation of the CVFPP:

- Reduce the chance of flooding
- Reduce the consequences of flooding
- Sustain economic growth
- Protect and enhance ecosystems
- Promote sustainability of the flood system

Through FloodSAFE, DWR and the Board will provide leadership and work with State, federal, tribal, local, and regional officials to improve flood management and emergency response systems throughout California, consistent with legislative direction. DWR will also invest the funds provided by Propositions 1E and 84 to reduce potential flood damages in the highest risk areas within the next 10 years, with additional funding and efforts required to fully realize the FloodSAFE goals. Coordination through FloodSAFE will ensure that (1) the CVFPP and its future updates contain the best available information and inputs from other FloodSAFE projects and programs, and (2) existing and ongoing FloodSAFE functions and funding mechanisms are efficiently used to help implement CVFPP recommendations.

CWC Section 8523 defines "State Plan of Flood Control" as the State and federal flood control works, lands, programs, plans, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project (CWC Section 8350), of flood control projects in the Sacramento River and San Joaquin River watersheds for which the Board or DWR has provided assurances, and of those facilities identified in CWC Section 8361.

Assurances are that the State provide, without cost to the United States, all lands, easements, and rights-of-way necessary for completion of the project; bear the expense of necessary highway, railroad, and bridge alterations; hold and save the United States free from claims for damages resulting from construction of the works; and maintain and operate all works after they are completed.

Central Valley Flood Management Planning Program

The Central Valley Flood Management Planning (CVFMP) Program is one of several programs managed by DWR under FloodSAFE, and it addresses flood-related planning activities within the Central Valley that require State leadership and participation. DWR intends to develop a shared understanding of flood risks and a broadly supported long-term vision for improving flood management through development of three major documents consistent with guidance from the 2007 flood legislation:

State Plan of Flood Control (SPFC) Descriptive Document

- State Plan of Flood Control (SPFC) Descriptive Document, will inventory and describe flood management facilities, lands, programs, conditions, and modes of operations and maintenance for the State-federal flood protection system in the Central Valley.

Flood Control System Status Report (FCSSR)

- Flood Control System Status Report (FCSSR), will assess and summarize performance for existing SPFC facilities.

2012 CVFPP

- 2012 CVFPP, will describe a sustainable, integrated flood management plan that reflects a systemwide approach for protecting areas of the Central Valley currently receiving protection from flooding by existing SPFC facilities.

Completion of the SPFC Descriptive Document and the FCSSR will inform and contribute to development of the 2012 CVFPP. Development of all three documents is interdependent with other DWR and FloodSAFE projects and programs, as highlighted in the table on the following page.

Central Valley Flood Protection Plan (and Central Valley Flood Management Planning Program) Interdependencies	
Other Related Efforts	Interdependencies
FloodSAFE Management Team	Coordinate all FloodSAFE activities
FloodSAFE Central Valley Floodplain Evaluation and Delineation Program	Provide input to FCSSR and CVFPP*
FloodSAFE Levee Evaluation Programs (Urban and Nonurban)	Provide input to FCSSR and CVFPP*
DWR Flood Project Inspection and Reporting Activities	Provide input to FCSSR and CVFPP
DWR Flood Project Maintenance Activities	Provide input to FCSSR and CVFPP
Delta Habitat Conservation and Conveyance Program	Coordinate actions in Delta*
DWR Emergency Response Planning	Influenced by implementation of CVFPP
Reservoir Reoperation Study	Provide input to CVFPP*
Delta Flood Projects (Delta Special Projects, Delta Subventions)	Provide input to CVFPP*
Delta Vision	Coordinate objectives and actions in Delta
Surface Storage Investigation Program	Coordinate opportunities for improved flood management
DWR Climate Change Study	Provide input to CVFPP
Integrated Regional Water Management Planning Program	Coordinate activities
FloodSAFE Statewide Flood Management Planning Project	Coordinate activities*

Key:

CVFMP = Central Valley Flood Management Planning Program

CVFPP = Central Valley Flood Protection Plan

Delta = Sacramento-San Joaquin Delta

DWR = California Department of Water Resources

FCSSR = Flood Control System Status Report

Notes: * Two-way communication through information-sharing, and coordination of activities and plan elements.

Efforts by Federal Partners

In addition to participating in CVFPP development, the U.S. Army Corps of Engineers (USACE) is initiating the Central Valley Integrated Flood Management Study (CVIFMS), a watershed study with DWR as the nonfederal sponsor. The study will define a long-range flood management program for the Sacramento and San Joaquin river basins and the corresponding level of federal participation. It 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. Building on the Sacramento and San Joaquin River Basins Comprehensive Study (concluded in 2001), the CVIFMS will be conducted in coordination with DWR's CVFPP effort to take advantage of opportunities for information sharing and joint product development.

As it conducts the CVIFMS, USACE will:

- Coordinate closely on CVFPP development to produce joint products for mutual benefits and use.
- Provide leadership in specific disciplinary areas for consistency with national management directives and guidelines.
- Coordinate with ongoing projects and programs to incorporate relevant information and actions in study development.

Subject to continued appropriation, USACE plans to complete the CVIFMS by 2015.

Central Valley Flood Protection Plan

DWR is required to prepare the CVFPP by January 1, 2012, for adoption by the Board by July 1, 2012. The plan will be updated every 5 years thereafter (in years ending in 7 and 2).

The CVFPP is intended to be a sustainable, integrated flood management plan that describes the existing flood risk in the **Sacramento-San Joaquin Valley** and recommends actions to reduce the probability and consequences of flooding. As the first edition of this long-term planning document, the 2012 CVFPP will describe a broadly supported vision for improving integrated flood management in the Sacramento-San Joaquin Valley. Produced in partnership with federal, tribal, local, and regional partners and other interested parties, the 2012 CVFPP will also identify goals, objectives, and constraints important in the planning process; distinguish plan elements that address flood risks; and, finally, recommend improvements to the State-federal flood protection system.

The 2012 CVFPP will support and guide many subsequent implementation activities by State, federal, and local agencies, including feasibility studies, environmental compliance, design, construction, and updates of existing or new local plans.

CVFPP Planning Areas

For planning and analysis purposes, and consistent with legislative direction, two geographic areas are important for CVFPP development.

SPFC Planning Area

- This area is defined by lands currently receiving protection from SPFC facilities. The State's flood management responsibility is limited to this area.

Systemwide Planning Area

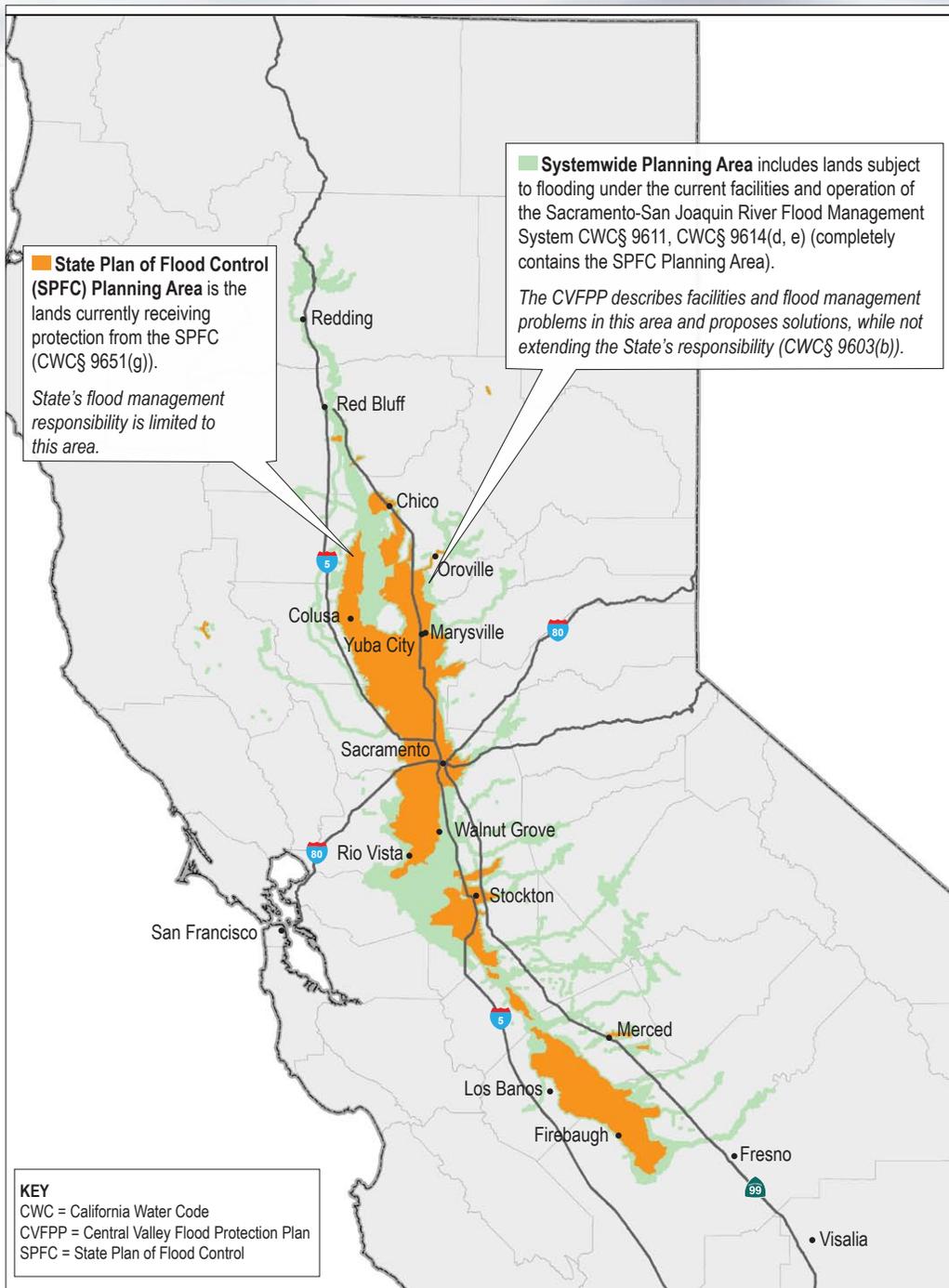
- This area includes lands subject to flooding under current facilities and operation of the Sacramento-San Joaquin River Flood Management System (CWC Section 9611).⁴ The SPFC Planning Area is completely contained within the Systemwide Planning Area.

The Sacramento-San Joaquin Valley includes lands in the bed or along or near the banks of the Sacramento River or San Joaquin River, or their tributaries or connected therewith, or upon any land adjacent thereto, or within the overflow basins thereof, or upon land susceptible to overflow therefrom. The Sacramento-San Joaquin Valley does not include lands lying within the Tulare Lake basin, including the Kings River. (Government Code Section 65007(g))

As shown on the map on the following page, planning and development for the CVFPP will occur differently in these regions. Within the Systemwide Planning Area, which encompasses the entire SPFC Planning Area, the CVFPP will describe flood management facilities, evaluate flood problems and deficiencies, and develop and propose solutions. Evaluations and analyses will be conducted at a higher level of detail within the SPFC Planning Area than in the Systemwide Planning Area, and will focus on SPFC facilities.

Within the CVFPP, structural and nonstructural projects may be identified or proposed anywhere within the watersheds tributary to the Sacramento and San Joaquin rivers for the purpose of addressing identified problems and deficiencies within the Systemwide Planning Area; however, actions will not be identified to address problems outside the Systemwide Planning Area. It is important to note that while DWR is evaluating potential actions in the Systemwide Planning Area as part of the CVFPP, this evaluation does not presuppose who will be the implementing or maintaining agency of these actions; rather, the CVFPP will identify mutually agreed on responsibilities for State, federal, and local jurisdictions as part of the plan, and describe other FloodSAFE programs or DWR activities that could address problems outside the scope of the CVFPP.

⁴CWC Section 9611, as amended, defines the Sacramento-San Joaquin River Flood Management System as "the system that includes the facilities of the State Plan of Flood Control, as amended, and any existing dam, levee, or other flood management facility that is not part of the State Plan of Flood Control if the board determines, upon recommendation of the department, that the facility does one or more of the following: (1) Provides significant systemwide benefits for managing flood risks within the Sacramento-San Joaquin Valley; (2) Protects urban areas within the Sacramento-San Joaquin Valley (where urban area herein is defined as 'any contiguous area in which more than 10,000 residents are protected by project levees')."



Planning Areas Relevant to the CVFPP

The Delta will receive a variety of considerations within the CVFPP. First, all lands that receive protection from the SPFC, including lands that are also located within the legal Delta, will be evaluated in the same manner. Second, any impacts due to potential changes in the upstream Sacramento-San Joaquin River Flood Management System will be analyzed and addressed including impacts that occur in the Delta as a result of upstream

changes. In addition, the areas in the Delta that are at regular risk of flooding from the tidal estuary will be evaluated and addressed through other FloodSAFE programs and through federal investigations such as the Army Corps of Engineers Delta Islands Levee Feasibility Study. The results of the additional Delta evaluations will be incorporated into the systemwide perspective of the CVFPP.

State Responsibility in the Context of the CVFPP

CWC Section 9603(a) requires that “the Central Valley Flood Protection Plan shall be a descriptive document, and neither the plan nor anything in this part shall be construed to expand the liability of the state for the operation or maintenance of any flood management facility beyond the scope of the State Plan of Flood Control, except as specifically determined by the board pursuant to Section 9611.”

CWC Section 9603(b) emphasizes this point by clarifying that “the Central Valley Flood Protection Plan reflects a systemwide approach to protecting the lands currently protected from flooding by existing facilities of the State Plan of Flood Control. Any flood protection benefits accruing to lands or communities outside the State Plan of Flood Control are incidental and shall not constitute any commitment by the state to provide, to continue to provide, or to maintain at, or to increase flood protection to, any particular level.”



Sacramento River, Sacramento Weir, & Yolo Bypass
January 1997

2012 CVFPP DEVELOPMENT PROCESS

The 2012 CVFPP will be developed using an iterative planning process completed in four phases:

Phase 1

- Define existing conditions and likely future challenges; identify problems and opportunities from various perspectives; and define goals, principles, and objectives to guide development and implementation of the plan. Results from this planning phase are summarized in *Interim Progress Summary No. 1* (this document).

Phase 2

- Identify a broad range of potential structural and nonstructural management actions for meeting the plan's objectives, consistent with the planning principles, and define evaluation methods and screening criteria to be applied. Results from this phase will be summarized in *Interim Progress Summary No. 2*.

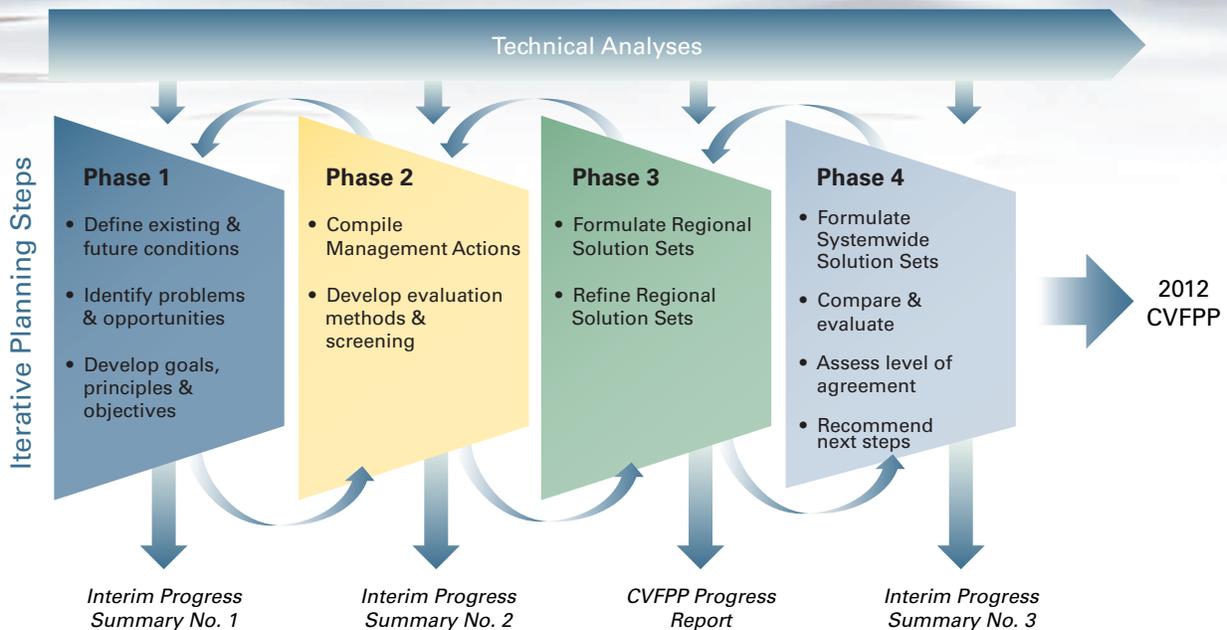
Phase 3

- Formulate sets of management actions (solution sets) by region to meet the goals and objectives; compare and evaluate the regional solution sets to identify trade-offs and compromises; and refine potential regional solution sets. Results from this phase will be summarized in the *CVFPP Progress Report*.

Phase 4

- Develop potential systemwide solution sets based on regional results; compare and evaluate potential systemwide solution sets; assess level of agreement among partners and interested parties; and recommend next steps for State action (priorities, timelines, and funding strategies). Results from this phase will be summarized in *Interim Progress Summary No. 3* and presented in the draft 2012 CVFPP.

The four planning phases are illustrated in the figure on the following page.



2012 CVFPP Products

Various milestone documents and products will be prepared as the 2012 CVFPP is developed:

Interim Progress Summaries

- As discussed previously, three interim progress summaries will be prepared to report progress toward completing the 2012 CVFPP. These interim progress summaries will present key findings at the end of each development phase, reflect the perspectives of DWR and its partners at the time they are produced, and provide opportunities for comment and feedback as the 2012 CVFPP is developed.

CVFPP Progress Report

- DWR is required to prepare a status report on the progress and development of the 2012 CVFPP on or before December 31, 2010 (CWC Section 9610c). This report will be an early working draft of the 2012 CVFPP, summarizing progress to date in developing the 2012 plan and meeting legislative requirements. This report will also allow the Board and the public to review preliminary findings and outcomes and provide comments on the direction and progress of the plan.

Reference Documents

- The 2012 CVFPP will reference various other documents that contain required information and analysis. These reference documents include the SPFC Descriptive Document and the FCSSR.

Environmental Compliance Documentation

- A programmatic environmental compliance document consistent with the California Environmental Quality Act will be prepared to support the 2012 CVFPP. The environmental analysis will evaluate potential impacts of implementing a broad range of actions described in the plan. It will address potential systemwide effects and identify systemwide mitigation actions or approaches, as necessary. Other reference documents will detail technical analyses and conditions.

Draft 2012 CVFPP

- On or before January 1, 2012, DWR must transmit the draft 2012 CVFPP to the Board for review (CWC Section 9612b), and for public distribution and comment. The Board will hold at least two public hearings to receive comments on the proposed plan, and accept comments in writing.

Final 2012 CVFPP

- No later than July 1, 2012, the Board is required to adopt the 2012 CVFPP. Two weeks before adoption, the Board must publish the final 2012 CVFPP, which will include revisions and refinements as directed by the Board and pursuant to public comments.

Communication and Engagement

A comprehensive communications and engagement process with partners and interested parties⁵ is being implemented in each phase of development for the 2012 CVFPP to share and solicit information, generate recommendations for plan content, promote feedback, and obtain input from partners and the public. This “bottom-up” approach to developing the 2012 CVFPP is intended to accomplish the following:

- Promote broad public understanding of flood management challenges and threats in the Systemwide Planning Area.
- Create opportunities for collaborative planning.
- Increase support for the plan through participation by partners and interested parties.
- Incorporate environmental stewardship and conservation in the planning process.

Many different venues have been established under the comprehensive communications and engagement process. These venues are intended to foster open and transparent communication and

provide individuals with opportunities to participate in CVFPP development based on their interests and availability. Venues include work groups (placed-based and subject-based) for content development; briefings to elected officials, tribal, and local jurisdictions for consistency and early coordination purposes; specific interest-based group coordination for focused discussions on plan content; regional and valley-wide forums to share information and reach out to the broader public; and other more conventional communication tools (e.g., Web site, informational flyers, and other written communications). These venues will be under continued review for effectiveness, and will be improved and modified, as needed.

A project is considered “sustainable” when it is socially, environmentally, and financially feasible for an enduring period.

⁵Detailed information is available in the draft *CVFMP Program Communications and Engagement Framework* (June 2009).



Yuba City, December 1955

Phase 1 of CVFPP development was conducted using an open and transparent planning process that included a wide range of activities, from topic- and region-specific work groups to presentations to Native American tribal interests. Types and frequencies of efforts undertaken in 2009 are listed below:

Regional Forums

- Five regional forums were held in June 2009 to kick off the planning process and recruit work group members.

Regional Conditions Work Groups

- Based in the upper and lower Sacramento Valley, the Delta, and the upper and lower San Joaquin Valley, 5 work groups participated in a total of 40 meetings as of 2009.

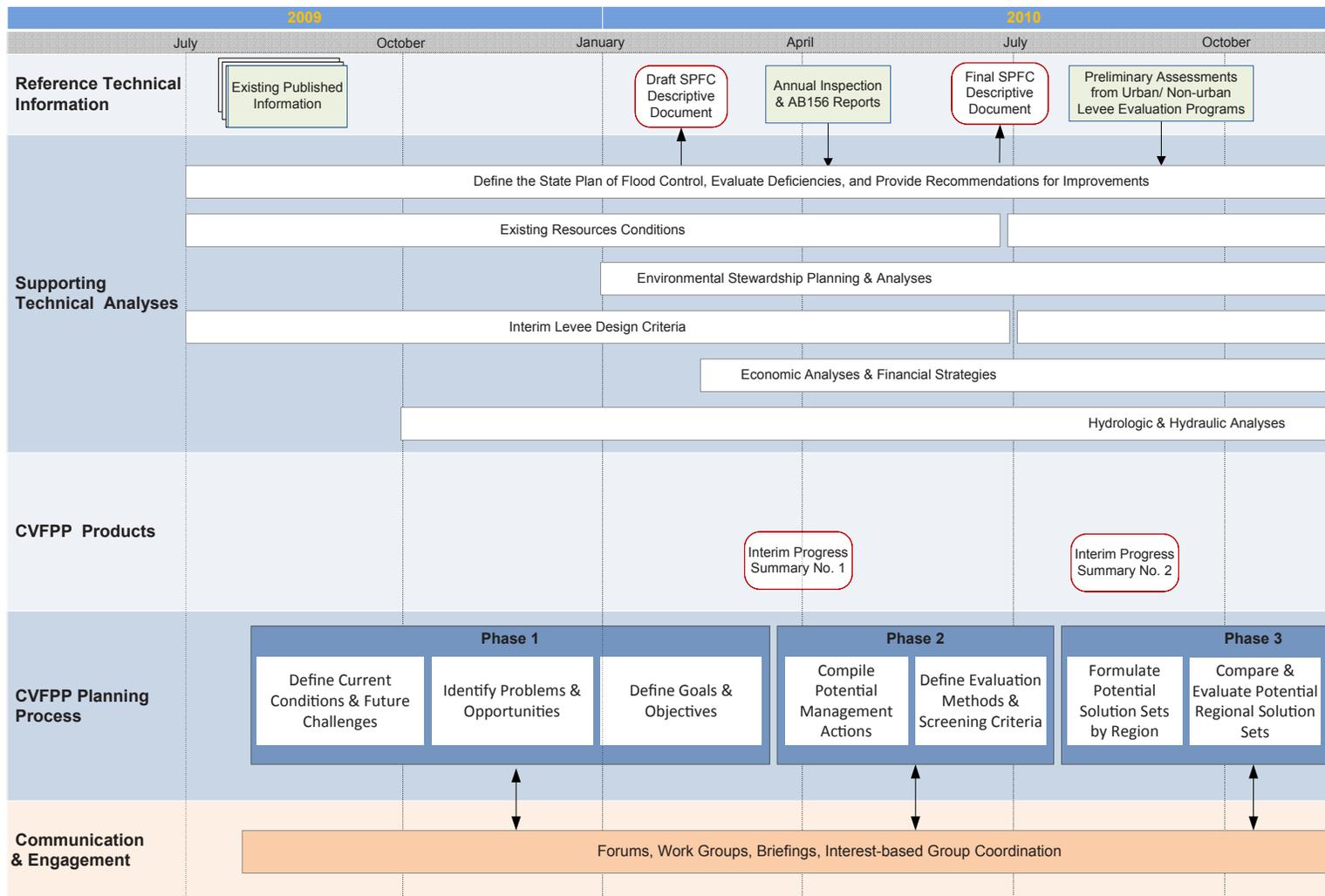
Topic Work Groups

- With participants throughout the Sacramento and San Joaquin river basins, these 4 topic work groups – Climate Change Scope Definition, Environmental Stewardship Scope Definition, Levee Performance Scope Definition, and Operations and Maintenance Scope Definition – held a total of 16 meetings in 2009.

Joint Subcommittee

- With participants from each work group, the Agricultural Stewardship Scope Definition Joint Subcommittee held three meetings.

Central Valley Flood Protection Plan Development Process



Legend



Legislatively Mandated Document



Interim Progress Milestone Document

CVFPP = Central Valley Flood Protection Plan

Local Jurisdictions

- More than 10 in-person and phone briefings to local governmental agencies and their staff have taken place to date.

Interest-Based Organizations

- More than 15 meetings were held with organizations whose members spanned larger geographic areas.

Native American and Environmental Justice Outreach

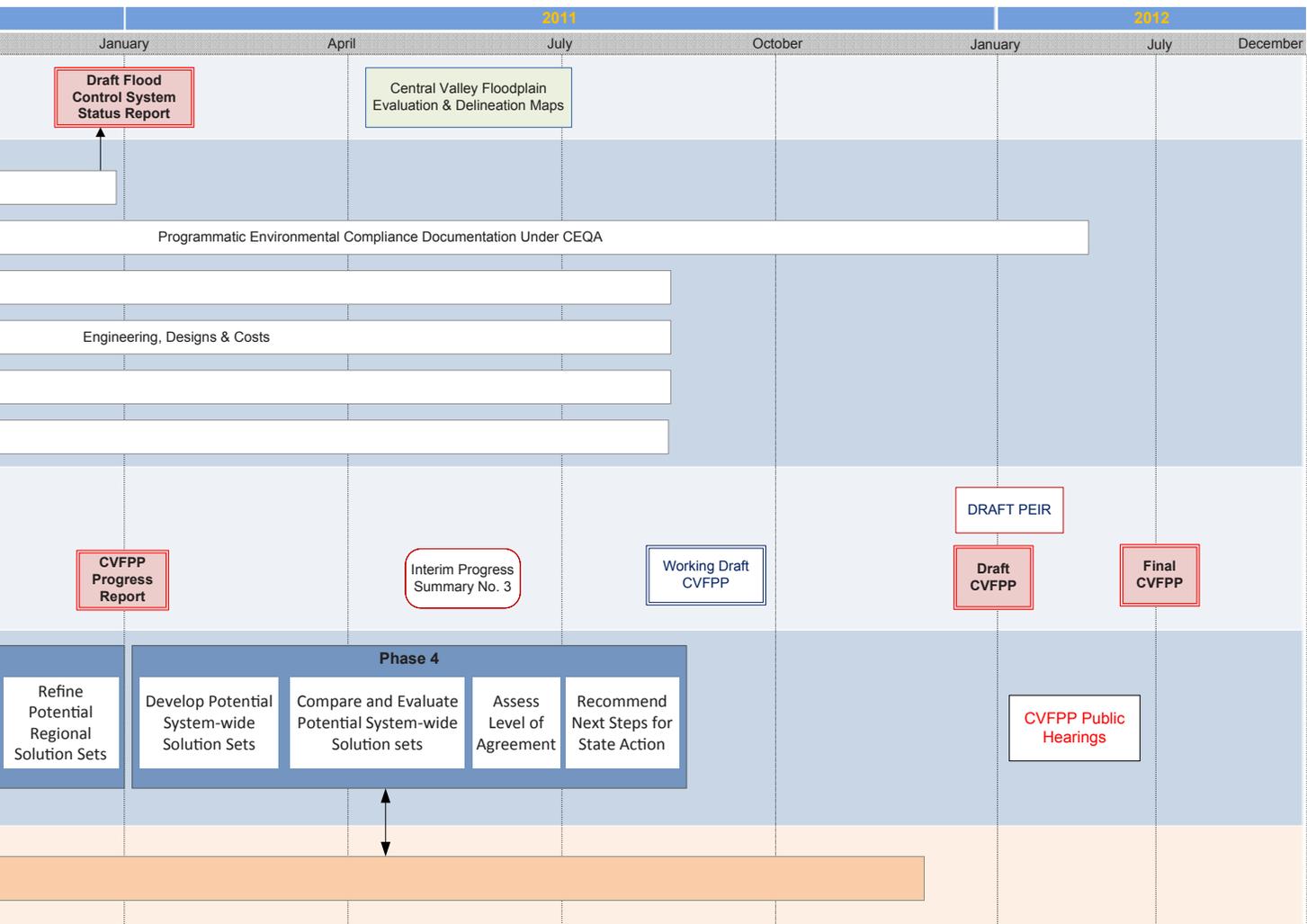
- Five briefings were held following contact with more than twenty groups to raise awareness and gauge interest.

Legislative Outreach

- Informational materials were distributed to legislative staff at the district and capitol offices of the legislators to keep these decision-makers apprised of the plan's development and progress.

Related Programs

- Coordination with other related projects and programs also took place to promote consistency, establish lines of responsibility, and effectively and efficiently develop the CVFPP. In particular, coordination occurred with FloodSAFE programs developing related information (Central Valley Floodplain Evaluation and Delineation Program, Levee Evaluation Program, Central Valley Hydrology Update, and others), and programs and projects in the Sacramento-San Joaquin Valley of similar scale (Bay-Delta Conservation Plan and San Joaquin River Restoration Program).



Work Groups and Subcommittees

Work groups are a critical element for developing the 2012 CVFPP, and help to capture the State, federal, tribal, local, and regional perspectives and expertise necessary to achieve broad public support. Work groups can be place-based (i.e., regional) or subject-based (i.e., topic), and are chartered to accomplish a series of pre-defined tasks contributing to CVFPP development.

In Phase 1, five Regional Conditions Work Groups were chartered to help develop content for the Regional Conditions Report – A Working Document, and recommendations for their own geographic regions, include the following:

- Upper Sacramento River Region
- Lower Sacramento River Region
- Delta Region
- Upper San Joaquin River Region
- Lower San Joaquin River Region

Four Topic Work Groups were chartered to support DWR in defining the scope and important considerations for several topics relevant to CVFPP development in all regions, including the following:

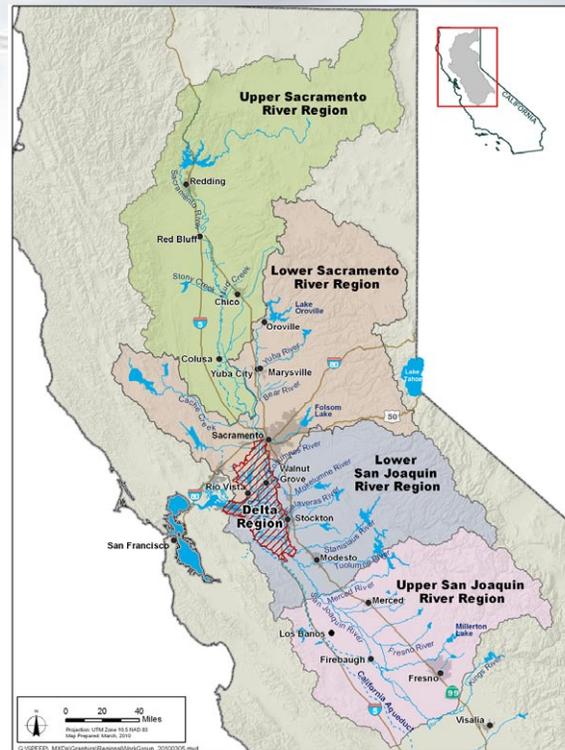
- Climate change
- Environmental stewardship
- Levee performance
- Operations and maintenance

In addition, a Joint Subcommittee on Agricultural Stewardship Scope Definition was organized under the Regional Conditions Work Groups to identify and capture the agricultural community's concerns for integration into the 2012 CVFPP.

Input and information developed by the Work Groups in Phase 1 are being incorporated into CVFPP development and are described in summary reports available at www.water.ca.gov/cvfmp/documents.cfm

Addressing Divergent Opinions

DWR will continue to foster widespread participation in developing, and building broad support for the 2012 CVFPP. Throughout the plan development process, there may be areas in which State, fed-



CVFPP Regional Conditions Work Group Regions

eral, tribal, local, regional, and other perspectives do not agree. Divergent opinions and the nature of any disagreements are important aspects of the planning process because they “bookend” the range of perspectives and help highlight key issues or challenges. These perspectives are recorded and often responded to, either in writing or through direct communication by DWR program staff, as part of the CVFPP development process.

Future CVFPP Updates

The CVFPP is to be updated every 5 years, with the first update due in 2017. Updates will incorporate new and revised information and data, and also review and realign goals, objectives, and actions as specific projects are implemented and conditions in the planning areas evolve. Additional activities, such as local and regional studies, federal feasibility studies, and environmental compliance evaluations will likely occur to support the implementation of physical elements or features of the flood management system as the CVFPP is updated.

INTERIM FINDINGS

Key outputs from collaboration with partners and interested parties for this first phase of 2012 CVFPP development include summaries of regional conditions, identification of problems and opportunities associated with flood management in the planning areas, draft goals for the CVFPP, draft planning principles to guide CVFPP development and implementation, and initial objectives to be explored and developed further. Detailed information on these findings is documented in Chapters 2, 3, 4, and 5 of the draft Regional Conditions Report – A Working Document (March 2010), and summarized in the following sections.

Information gathered to date represents a starting point; throughout the 2012 CVFPP planning process, additional information will be gathered from ongoing FloodSAFE activities, and new information will be developed as the need arises. This includes information regarding physical, biological, socio-economic, cultural, institutional, and related resources conditions to support environmental compliance activities.

Regional Conditions

A critical initial step in any planning process is to inventory, and forecast future conditions of, resource conditions that will be important in defining and, ultimately, resolving resource issues. One of the key outputs of Phase 1 CVFPP development is a detailed description of resource conditions within the Systemwide Planning Area. These conditions, along with other findings and outcomes from the first development phase, are documented in the draft Regional Conditions Report – A Working Document. This technical reference document is a work-in-progress; and the resource descriptions will be refined and expanded as plan development continues. It is being made available to partners and interested parties to help verify that State, federal, tribal, local, regional, and other perspectives have been recognized for consideration in development of the plan.



Levee Break near Arboga, January 1997

Many ongoing projects and programs by DWR and its partners are developing information and data that will support the 2012 CVFPP and/or future updates to the plan. Some of these programs include the following:

- *FloodSAFE Central Valley Floodplain Evaluation and Delineation Program*
- *Central Valley Hydrology Update by USACE*
- *DWR Climate Change Study*
- *DWR Reservoir Reoperation Study*
- *DWR Levee Inspection, Reporting, and Maintenance activities*
- *FloodSAFE Urban and Non-Urban Levee Evaluation Programs*
- *FloodSAFE Statewide Flood Management Planning Project*

More information about FloodSAFE projects and programs can be found at www.water.ca.gov/floodsafe/

Information presented in the Draft Regional Conditions Report – A Working Document will be used to describe existing conditions for a programmatic environmental compliance analysis, and will be incorporated into appropriate technical reference documents to the 2012 CVFPP.⁶ This information includes the following:

- Historical Conditions (history of flood management development, facility construction, and operations and maintenance in the Sacramento River and San Joaquin River basins).
- General Regional Descriptions (for the five planning regions).
- Existing physical conditions, infrastructure, biological conditions, social and economic conditions, cultural resources, institutional, emergency planning response and recovery.
- Likely Future Conditions (period of analysis, key drivers and influencing factors, likely changes in conditions through 2050).
- Pending Projects and Programs (projects that might influence flood conditions in the future).

To date, much of this information has been compiled using existing and available sources and with the assistance of the Regional Conditions and Topic work groups. The information gathered reflects the regional and local perspectives of the various participants, and highlights the conditions and resource areas that participants considered to be important to this effort.

Although too voluminous for this summary, information collected on regional conditions to date can be found in Chapter 2 of the draft Regional Conditions Report – A Working Document (March 2010)

Land uses in the Sacramento and San Joaquin Valleys are still primarily agriculture and open space, with more than 60% of the Systemwide Planning Area in agriculture, and about 12% in urban uses.



Feather River

Problems and Opportunities

A “problem” is an undesirable condition – something that is currently viewed as “broken” or will likely be so in the future. Problems provide the common focal point or reason for people to join together in the planning process. An “opportunity” is an undertaking that could further increase the value of CVFPP actions – a positive action that can be taken while addressing the identified problems.

For the 2012 CVFPP, problems and related opportunities were developed from input provided by State, federal, tribal, local, and regional interests, many of whom participated in the Regional Conditions and Topic work groups convened to help articulate existing resource conditions. Key reference materials were also used to identify and define problems and opportunities. The identified problems and opportunities contained in this document include the views, perspectives, and input of all participants. At this point in the planning process, there are differing opinions on whether all of the items included as problems and opportunities are in fact problems that should be evaluated further. There are also differing opinions about the magnitude, relative importance or underlying causes of the identified problems and opportunities. A good example of an item where there is significant disagreement about the factual basis of the statement is “Flood Risks and Consequences of Flooding: Levee structural integrity is compromised due to: f) large, woody vegetation.” This statement is included to reflect that it is important to one or more participant groups, but this summary document should not be interpreted to mean that DWR agrees with all of the statements included in the problems and opportunities section.

⁶Draft and final CVFPP documents will be available at <http://www.water.ca.gov/cvfmp>.

Included in the following summary table is a broad listing of factors thought to contribute to flood problems and opportunities within the planning areas, reflecting collective input from the multiple sources described above. Contributing factors were identified, refined, and amended by the work groups in an iterative fashion and then synthesized into five broad categories: (1) flood risks and consequences of Flooding, (2) operations and maintenance, (3) ecosystem, (4) policy and institutional, and (5) integrated water management. A problem or opportunity statement was developed for each category of contributing factors to summarize key themes. Results are also summarized in the summary table.

The Regional Conditions Work Groups also provided input on the relative applicability of the contributing factors within their respective regions. For example, some of the contributing factors are applicable only in specific locations or regions, while others are present valley-wide. These regional differences are reflected in the summary table using the following symbols: "N/A" indicates a factor is not applicable to a region; a half-circle denotes that the factor is relevant to parts of a region; and a full circle denotes that the factor is relevant to the entire region. Scoring is subjective and not intended to be scientifically precise. Rather, it helps capture the views and perspectives of the participants and synthesizes in a simplified manner input received from participants.

The two major flood management systems in the Sacramento-San Joaquin Valley – the Sacramento River Flood Control Project and the San Joaquin River and Tributaries Project – have a combined total of approximately 1,613 miles of State-federal project levees, 1,200 miles of designated floodways, several thousand acres of project channels, and 56 major flood control works.

The existing State-federal flood management system influences flooding and flood management on more than 2.2 million acres of lands.

Detailed descriptions of the problems, opportunities, and contributing factors identified to date can be found in Chapter 3 of the draft Regional Conditions Report – A Working Document (March 2010).



Flood damage in Central Valley

DRAFT 2012 CVFPP PROBLEMS & OPPORTUNITIES SUMMARY OF CONTRIBUTING FACTORS & REGIONAL DIFFERENCES

Problem Grouping – Proposed CVFPP Problem Statements and Contributing Factors	Regional Differences*					
	Upper Sac	Lower Sac	Delta		Upper SJ	Lower SJ
			Tidal	Riverine		
	N/A	Problem not applicable to region ◐ Problem is relevant to parts of the region** ● Problem is relevant to the entire region**				

Risks and Consequences of Flooding – The Sacramento and San Joaquin river basins have been subject to flooding and increased flood risk to people and property because of physical and operational constraints of the existing flood management systems, reliance on flood management facilities that do not provided the level of protection currently desired, changing land uses in flood-prone areas and limited understanding of flood risk. Flood risk is likely to continue to increase in some areas of the river basins due to climate changes.

Channels do not convey design capacity because of changed channel conditions:						
a) Vegetation growth in channels	◐	◐	◐	◐	◐	◐
b) Accumulations of sediment, snags, or debris	◐	◐	◐	●	◐	◐
c) Changed stream gradient due to subsidence	N/A	◐	◐	◐	◐	N/A
d) Decreased stream gradient due to channel meander	●	N/A	N/A	N/A	N/A	◐
e) Additional downstream restrictions	N/A	N/A	N/A	N/A	◐	◐
Levee structural integrity is compromised due to the following:						
a) Erosion	◐	◐	◐	●	◐	◐
b) Seepage	◐	◐	◐	◐	◐	◐
c) Overtopping (wind, wave run-up, high flows)	◐	◐	◐	●	◐	◐
d) Subsidence/settling	◐	◐	●	◐	◐	◐
e) Animal burrowing activity	◐	◐	◐	◐	◐	◐
f) Large, woody vegetation	◐	◐	◐	◐	◐	◐
g) Contact damage (ships and abandoned vessels)	N/A	◐	◐	●	N/A	N/A
h) Human activities on the waterside of levee	◐	●	●	●	◐	◐
i) Encroachments	◐	◐	◐	◐	◐	◐
j) Levee penetrations	◐	◐	◐	◐	N/A	◐
The performance and operation of other flood facilities (weirs, bypasses, gates, bifurcations, overflows) is constrained by the following:						
a) Accumulation of sediment	◐	◐	N/A	◐	◐	◐
b) Additional downstream restrictions	◐	◐	N/A	N/A	N/A	◐
c) Antiquated control systems	◐	◐	N/A	N/A	◐	◐
d) Subsidence	N/A	◐	N/A	N/A	◐	◐
e) Erosion	●	◐	N/A	N/A	◐	◐
f) Facilities not engineered to USACE/DWR standards	◐	◐	N/A	N/A	●	◐
Prescribed reservoir releases under current water control manuals can result in flows that exceed downstream channel capacities because of the following:						
a) Insufficient flood storage capacity to regulate flood flows	●	●	●	●	●	●
b) Water control manuals not designed to accomplish systemwide coordinated operations	●	●	●	●	●	●
c) Water control manuals based on a limited period of record	●	●	●	●	●	●
d) Not using available forecasting technology in operations decisions	●	●	●	●	●	●
e) Inadequate snow and flow sensor data	●	●	●	●	●	●

Note: The identified problems and opportunities contained in this table include the views, perspectives, and input of all participants. At this point in the planning process, there are differing opinions on whether all of the items included as problems and opportunities are in fact problems that should be evaluated further. There are also differing opinions about the magnitude, relative importance or underlying causes of the identified problems and opportunities.

Problem Grouping – Proposed CVFPP Problem Statements and Contributing Factors	Regional Differences*					
	Upper Sac	Lower Sac	Delta		Upper SJ	Lower SJ
			Tidal	Riverine		
	N/A	Problem not applicable to region				
	◐	Problem is relevant to parts of the region**				
	●	Problem is relevant to the entire region**				
Channels and levees no longer provide the expected level of protection they were originally designed to achieve because of the following:						
a) Changes in design standards and expectations for levee performance	◐	◐	◐	◐	◐	◐
b) Changes in hydrology/hydraulics and/or climate change	◐	◐	◐	◐	◐	◐
c) Changes within designated floodways and bypasses	◐	◐	◐	◐	◐	◐
d) Maintenance challenges	◐	◐	◐	◐	◐	◐
Existing flood management system does not provide the level of protection desired and/or required because of the following:						
a) System designed for different uses and levels of protection	●	●	●	●	●	●
b) Adequate funding for maintenance and improvements not available	●	●	●	●	●	●
c) New legislation increased protection requirements for urban and urbanizing areas	◐	●	●	●	◐	●
Challenges to effective floodfighting mobilization include the following:						
a) Confusion regarding flood fight roles and responsibilities	●	●	●	●	◐	◐
b) Insufficient funding	●	●	●	●	●	●
c) Financially punitive regulations governing nonjurisdictional response	◐	◐	◐	◐	◐	◐
d) Lack of comprehensive mutual aid agreements covering flood response	●	●	●	●	●	●
Limitations of emergency response capabilities to flood threats include the following:						
a) Institutional capacity, resources, and coordination	●	◐	●	●	●	◐
b) Local flood contingency planning and regional response planning challenges (access, egress, warning, and communications)	●	●	●	●	●	◐
c) Critical infrastructure located within the floodplain	◐	◐	◐	◐	◐	◐
Challenges to existing post-flood recovery plans and programs include:						
a) Debris removal	◐	◐	◐	◐	◐	◐
b) Timely restoration of utilities	◐	◐	◐	◐	◐	◐
c) Inefficient coordination	◐	◐	◐	◐	◐	◐
d) Agricultural recovery	◐	◐	◐	◐	◐	◐
e) Regional economic recovery	◐	◐	◐	◐	◐	◐
f) Ecosystem flood-related issues	◐	◐	◐	◐	◐	◐
Among the public there is a general lack of understanding of flood risk because of the following:						
a) Limited access to information	●	●	●	●	●	●
b) False sense of security	●	●	●	●	●	●
c) Undefined responsibility for education	●	●	●	●	●	●
Limited understanding about the beneficial functions of floodplains	◐	◐	◐	◐	◐	◐
Floods can impair water quality because of the following:						
a) Floods can impair water quality due to Groundwater contamination via unsealed wellheads	◐	N/A	N/A	N/A	N/A	N/A
b) Mobilization of hazardous materials and contaminants in floodplain and watershed	◐	◐	●	●	◐	◐
c) Mobilization of sediments	●	●	●	●	●	●
d) Contamination of water treatment and wastewater treatment facilities	◐	◐	N/A	N/A	◐	◐
Flood system maintenance, such as dredging and clearing, can disturb sediment and negatively impact water quality	◐	◐	●	●	◐	●

Problem Grouping – Proposed CVFPP Problem Statements and Contributing Factors	Regional Differences*					
	Upper Sac	Lower Sac	Delta		Upper SJ	Lower SJ
			Tidal	Riverine		
	N/A	Problem not applicable to region ◐ Problem is relevant to parts of the region** ● Problem is relevant to the entire region**				
Operations and Maintenance – Operations and maintenance (including significant repairs) of the flood management systems in the Sacramento and San Joaquin river basins are difficult and often deferred because of limitations on original system design, prevalent system encroachments, inconsistent standards and practices, complex and onerous permitting and mitigation requirements, and lack of reliable funding sources and financial instruments.						
Institutional and financial arrangements hinder systemwide approaches to major repairs	●	●	●	●	●	●
It is often difficult to adequately maintain levees and channels according to operations and maintenance manuals because of the following:						
a) Permitting and mitigation requirements and/or restrictions						
i) Cost and timeliness of process	●	●	●	●	●	●
ii) Restrictive construction work windows	●	●	●	●	●	●
iii) Uncertain permitting and mitigation requirements for routine maintenance	●	●	●	●	●	●
b) Vegetation growth	◐	◐	◐	◐	◐	◐
c) Lack of sustainable funding for proactive maintenance						
i) Insufficient revenue generation	●	◐	●	●	●	◐
ii) Disproportionate cost of permitting	●	◐	●	●	●	◐
d) Inconsistent and/or conflicting State, federal, and local maintenance standards, practices, and implementation	◐	◐	◐	◐	◐	◐
e) System design characteristics (designed to flush sediment, but now impacting levees)	●	●	◐	◐	◐	◐
Incorporating environmental benefits into flood management system maintenance, repair, and improvement projects may increase local responsibilities and costs	●	●	●	●	●	●
Ecosystem – Many management actions that could be taken to improve flood risk management and operations and maintenance can also provide significant opportunities for improvements to native habitats and species, and important natural hydrologic, geomorphic, and biologic processes in the Sacramento and San Joaquin river basins.						
There has been a loss, fragmentation, and degradation of native habitat and species because of the following:						
a) Loss and fragmentation of habitat and lack of connectivity between floodplains and river systems	●	●	●	●	●	●
b) Introduction and establishment of invasive species	◐	◐	●	●	◐	◐
c) Limited environmental regulation coordination	●	●	●	●	●	●
d) Conflicts between maintenance practices and ecological processes	●	●	●	●	●	●
e) Obstacles to successful mitigation (coordination, funding, monitoring, and adaptation)	●	●	●	●	●	●
Flood system development and regulated dams and reservoirs have negatively impacted natural hydrologic, geomorphic, and biologic processes because of the following:						
a) Engineered/constrained channels and related facilities	●	●	●	●	●	●
b) Changes in flow regime (duration and timing)	●	●	●	●	●	●

Note: The identified problems and opportunities contained in this table include the views, perspectives, and input of all participants. At this point in the planning process, there are differing opinions on whether all of the items included as problems and opportunities are in fact problems that should be evaluated further. There are also differing opinions about the magnitude, relative importance or underlying causes of the identified problems and opportunities.

Problem Grouping – Proposed CVFPP Problem Statements and Contributing Factors	Regional Differences*					
	Upper Sac	Lower Sac	Delta		Upper SJ	Lower SJ
			Tidal	Riverine		
	N/A	Problem not applicable to region				
	◐	Problem is relevant to parts of the region**				
	●	Problem is relevant to the entire region**				
Policy and Institutional – Responsibilities and roles for flood management in the Sacramento and San Joaquin river basins are dispersed among many agencies with varying functions and priorities. Development of the CVFPP provides an opportunity to improve the common understanding and coordination of flood management agency roles, responsibilities, and policies; promote more informed consideration of flood risk in land use planning; and address expected needs for funding.						
Flood management is often made difficult by the large number of agencies and entities involved because of the following:						
a) Complex jurisdictional roles and responsibilities	●	●	●	●	●	●
b) Conflicting policies, missions, and priorities	●	●	●	●	●	●
c) Conflicting regulations and legislation	●	●	●	●	●	●
d) Lack of coordination (planning and implementation)	●	●	●	●	●	●
Land-use decisions at the local level may not adequately consider flood risk because of the following:						
a) Poor or outdated flood risk information and maps	●	●	●	●	●	●
b) Strong desire for economic development	◐	◐	◐	◐	◐	◐
Land-use practices can affect flood management because of the following:						
a) Rapid urbanization	◐	◐	◐	◐	◐	◐
b) Agricultural land practices	◐	◐	◐	◐	◐	◐
Trend toward strict liability for damages due to flood control facility failure deters the construction and effective management of flood management projects.	●	●	●	●	●	●
Current federal, State, and local funding mechanisms are not adequate to sustain effective flood management because of the following:						
a) Inability to assess and generate funding at a local level	●	●	●	●	●	●
b) Limitations on State funding	●	●	●	●	●	●
c) Federal cost share percentage is declining	●	●	●	●	●	●
d) Federal benefit/cost requirements	●	●	●	●	●	●
Integrated Water Management – Flood management systems within the Sacramento and San Joaquin river basins rely on physical hydrologic features, infrastructure, and institutional arrangements that affect other components of water resources management. Flood management requirements often make it difficult to meet other water resources needs. Many management actions that could be taken to improve flood risk management and operations and maintenance can also provide significant opportunities for improvements to water supply, water quality, ecosystem functions and attributes, and recreation.						
Integrated flood management is made difficult by competing needs, including the following:						
a) Flood protection	●	●	●	●	●	●
b) Water supply	●	●	●	●	●	●
c) Ecosystem resources	●	●	●	●	●	●
d) Recreation	●	●	●	●	●	●
e) Water quality	●	●	●	●	●	●
f) Hydropower	●	●	●	●	●	●
g) Dam safety	●	●	●	●	●	●

* Table is intended to graphically capture regional differences. It is subjective, not meant to be scientifically precise, and not meant to imply that technical or scientific documentation about the condition is necessarily available.

** "Relevant" indicates that a region is experiencing the problem or previously experienced problems associated with a particular contributing factor. In those instances where the problem was previously experienced, the region may have resolved the problem, but concerns remain over the problem potentially recurring in the future.

Key:
 USACE = U.S. Army Corps of Engineers
 DWR = California Department of Water Resources
 CVFPP = Central Valley Flood Protection Plan



Goals

The draft CVFPP goals provide direction on plan development to meet legislative requirements, address identified deficiencies, problems, and opportunities, and contribute to the overarching draft FloodSAFE goals (www.water.ca.gov/flood-safe/). Goals for the CVFPP were collaboratively developed by DWR, its partners (e.g., USACE, the Board), and interested parties, and are to be pursued collectively by State, federal, and local interests, as appropriate to their individual jurisdictions and responsibilities:

Primary Goal

Improve Flood Risk Management

- Reduce the chance of flooding, and 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.*

Supporting Goals

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 operation and maintenance, including significant repairs.

Promote Ecosystem Functions

- Incorporate flood management system improvements that integrate the recovery and restoration of key physical processes, self-sustaining ecological functions, native habitats, and species.

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, 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.

The draft CVFPP goals reflect the collective views and perspectives of a broad range of partners, interested parties, and the public on important issues and areas that the CVFPP should address. The goals do not commit the State to implementing projects to address problems outside the SPFC (CWC Section 9603); rather, the State will work with local and regional entities to help identify and coordinate projects that address problems and needs related to integrated flood management within the Central Valley but outside the SPFC (refer to the Planning Areas discussion on pages 5 and 6). While contributions to the goals may differ from region to region and project to project, sets of management actions should collectively contribute to each of the goals. The CVFPP goals are intended to be broad and enduring; consequently, it is not anticipated that they would change significantly over time as the plan is updated.

Planning Principles

While goals provide direction on “what” the CVFPP will accomplish; planning principles provide guidance on “how” the CVFPP will be developed and implemented. Initial planning principles for the CVFPP have been grouped into three broad categories, as follows:

Flood Risk Management

- Approach flood risk management on a systemwide basis and avoid (where feasible) or mitigate adverse or redirected hydraulic, environmental, and other impacts.
- Apply available State funds for flood management improvements in ways that amplify benefits provided through cooperative cost-sharing with federal and local partners.
- Provide information about flood risks and flood preparedness to help residents, communities, and public officials make safer decisions and manage residual risks.
- Adapt and implement flood management improvements that recognize inherent differences regarding flooding mechanisms and the value of flood protection (for example, urban, small communities, non-urban), while reducing the likelihood of sudden and catastrophic failures.

Environmental Stewardship

- Identify conservation strategies that improve the quantity, biotic diversity, and connectivity of riparian, wetland, floodplain, and shaded riverine aquatic habitats, and promote the recovery and stability of native species populations.
- Protect and improve natural floodplain processes, recognizing the agricultural and ecological values of floodplain lands and promoting environmental stewardship as a public benefit.
- Adapt and implement systemwide flood management and environmental stewardship strategies that promote resilience to ongoing and future challenges such as climate change.

Sea levels are rising and it is generally accepted that this trend will continue. This rise can contribute to levee failures in the Delta, inundating communities, damaging infrastructure, and interrupting water supplies.

Integration and Coordination

- Recognize the broad benefits provided by agriculture, and integrate flood management system improvements that help support a sustainable agricultural economy.
- Integrate flood management with other water management actions (such as groundwater storage, reservoir reoperation, and environmental stewardship).
- Integrate considerations of flood risk management and corresponding liabilities in land use planning.
- Provide potentially affected parties with meaningful opportunities to participate in the CVFPP development process and subsequent implementation actions.
- Clarify flood management roles and responsibilities and associated liabilities for providing flood protection and assisting in recovery from damaging floods.



Animal Rescue near Olivehurst, January 1997

Objectives

Collectively, objectives are intended to define the overall accomplishments of the 2012 CVFPP. Objectives are not specific actions to achieve goals, but rather an overall measure of success of the plan. Some objectives may address or contribute to a single goal, while others may contribute to multiple goals.

Ideally, objectives should strive to identify a potential level of accomplishment that either individual management actions or combinations of management actions can achieve. An objective should also be framed so that it is easy to determine the extent to which the goal has been met or achieved. This will help DWR and its partners to later measure the progress and level of accomplishment of the CVFPP as it is implemented and updated.

Developing the appropriate level of specificity or geographic scale of an objective is a difficult process and will require multiple iterations. In Phase 1 of plan development, Regional Conditions Work Groups focused on identifying categories or themes around which objectives could be formed, developing sample objectives, and discussing how these sample objectives could contribute to the draft goals of the CVFPP. A variety of factors make it challenging to develop time-based and measurable objectives. The ability to determine feasibility and the appropriate time frame for an objective is heavily dependent on information still being developed by various ongoing studies and investigations. Other challenges relate to the different regional priorities and perspectives throughout the CVFPP planning areas. For example, objectives that may be important for one region may not be a high priority for another. Because of differing viewpoints, it was challenging to agree on specific time frames and exact performance metrics for the sample objectives identified in Phase 1.



Delta Levees-Stewart Tract

The following themes for objectives were identified by study partners and interested parties for further exploration and development. These themes do not represent a complete or final list to be included in the 2012 CVFPP, but rather reflect important issues around which partners and interested parties would like to see objectives crafted as plan development continues.

- Provide greater flood protection
 - » *Within the SPFC Planning Area*
 - » *Outside the SPFC Planning Area*
- Increase habitat within the flood management system.
- Establish streamlined permitting processes.
- Improve emergency preparedness and flood recovery planning.
- Reduce long term operations and maintenance costs
- Educate the public on potential flood risks.
- Contribute to groundwater recharge and other integrated water management benefits.
- Create sustainable funding mechanisms for flood management activities.
- Improve land management within floodplains and floodways.

Additional discussion and analysis will be needed to develop specifics related to measurement, timing, and geographic focus, where applicable. For some objectives, this will require collecting and applying technical data and other information to identify the magnitude, location, and extent of opportunities to realize objectives. For example, information being developed as part of the FCSSR will provide technical data related to flood management facility status and current performance that will be instrumental in establishing an appropriate timeline for achieving any objectives related to SPFC facilities. Further, some objectives may address problems that occur only in specific regions or locations; refinement of these objectives will need to consider where underlying problems are occurring to establish appropriate and achievable quantities and completion dates.

Objectives will be formulated and refined in an iterative process that will continue throughout development of the 2012 CVFPP.



Levee Repairs along the Sacramento River

Level of Agreement

As described previously, DWR is developing the 2012 CVFPP in close coordination with partners and interested parties. In Phase 1 of 2012 CVFPP development, documented herein, an active partner and interested party involvement process provided opportunities for people to engage in the plan development process in various ways, such as participating in Regional Conditions or Topic work groups. Results from this engagement process included description of regional conditions in the Systemwide Planning Area; identification of problems and opportunities, and draft goals; and development of draft planning principles and preliminary objectives for the 2012 CVFPP. This Interim Progress Summary No. 1 seeks to capture the views, opinions, and perspectives of all participants and input received.

While opinions and perspectives on flood management and related issues vary within the Planning Areas, broad agreement exists on the following themes/areas:

- Flooding poses a threat to public safety, communities, businesses, industries, and the economy of the Sacramento-San Joaquin Valley and the Delta.
- The current flood management system was not designed or constructed to meet the multiple purposes that modern society needs from rivers and floodways, including groundwater recharge, replenishment of productive agricultural soils, filtering of water and soil pollutants, maintenance of biological resources, and recreation needs.
- Stresses on the flood management system will continue to worsen with continued increases in human population, changes in land use, and accelerated changes in climatic conditions
- Flood management and risk reduction is a more realistic expectation than controlling all floods, given the natural forces of rivers, and public funding capacity.
- Future changes to the flood management system should not be implemented in a piecemeal fashion, as in the past, and a broader suite of creative, integrated approaches should be used to achieve multiple benefits.
- Improved policies, standards, coordination, and guidance are needed to facilitate effective and efficient operations and maintenance of the flood management system.
- The level of flood protection provided to some communities in the Sacramento-San Joaquin Valley is not sufficient.
- Integration of environmental solutions into flood management, beyond traditional mitigation and compliance, can lead to longer-term project sustainability, faster project approval, and fewer conflicts, while simultaneously achieving both flood management and environmental goals.
- Restoring floodplain processes and functions will reduce risk and magnitude of flooding.

Continual Improvement

Authentic engagement of partners, interested parties, and the broader community is essential to the successful development and implementation of the 2012 CVFPP. During Phase 1 of this effort, substantial outreach was provided throughout the Sacramento and San Joaquin river basins. Partners and interested parties were also invited to directly participate in generating draft content, including descriptions of regional conditions, problems and opportunities, and draft goals and principles. Given the high priority of creating a plan with substantial community support, it is essential to routinely evaluate and articulate lessons learned in working together to develop major plan features.

Assessment of each planning phase will help DWR evaluate its approach to engaging partners and interested parties in plan development. For Phase 1, discussions, interviews, and surveys were used to solicit input and feedback from work group members and Plan Development Team members. All Regional Conditions and Topic work groups were represented in the assessment. Based on the feedback collected, preliminary recommendations for Phase 2 include the following:

- Provide a clear plan for Phase 2, and address lingering questions about the context and intended application of the CVFPP.
- Demonstrate executive commitment and leadership.
- Maintain the commitment to stakeholder involvement and to bringing missing perspectives into the dialogue.
- Establish realistic time frames for developing products, and focus less on process.
- Provide clear guidance to partners about what is being asked of them, and ensure that meeting materials are well-designed.
- Maintain the regional work group structure, and use sub-groups, as appropriate.
- Provide work groups with clear scopes of work and desired outcomes, along with realistic schedules and detailed work plans.
- Clarify and consolidate staff roles, and delegate appropriate authority to team leads.
- Provide adequate support to team leads, including both allocation of staff hours and clear direction from leadership.
- Improve internal communication, coordination, and collaboration across work groups.

Detailed information on the Phase 1 findings and recommendations is available at <http://www.water.ca.gov/cvfmp/documents.cfm>



Paradise Trailer Park, San Joaquin River, January 1997



Sutter Bypass Levee breach endangering the town of Meridian, January 1997

NEXT STEPS

Completion of the draft *Regional Conditions Report – A Working Document* and this Interim Progress Summary No. 1 represents a major milestone in development of the 2012 CVFPP, and serves as a critical building block for the next phase in the development process. The next phase of CVFPP development – Phase 2 – will focus on identifying management actions, described below.

Development of Management Actions

The major focus of upcoming work in Phase 2 will be on identifying, developing, and evaluating individual management actions to address identified problems and opportunities and contribute to CVFPP goals, consistent with the planning principles. Management actions could be structural or nonstructural actions, ranging from levee modifications to reservoir reoperation to land management. Characteristics of different management actions will be identified and compared, including a preliminary review of potential benefits, regional applicability, feasibility, and other considerations. Although not part of Phase 1, many management actions were identified during that effort and have been retained for continued discussion and development in Phase 2. In addition, evaluation methods and metrics will be identified to help compare and screen identified management actions, and identify

actions warranting further development and consideration. Results from Phase 2 will be summarized in *Interim Progress Summary No. 2*.

Regional and Systemwide Solutions

In Phases 3 and 4, an array of alternatives or “solution sets” reflecting various combinations of the identified management actions will be formulated for display and comparison in the 2012 CVFPP. The solution sets will provide the State and other local and regional decision-makers with information on the costs, benefits, and trade-offs associated with different approaches to improving flood management in the Central Valley. The solution sets will also provide the basis for evaluating a broad range of potential environmental effects in a programmatic environmental compliance document for the 2012 CVFPP.

The array of solution sets will be developed to capture a broad range of potential flood management actions and approaches. Each solution set will have a different focus or way of addressing problems and opportunities, and will be populated with different combinations of structural and nonstructural management actions. The solution sets are intended to represent a starting point to help bookend the possible range of benefits, costs, and impacts, and will be revised and refined as plan development continues.

Systemwide solution sets will be developed in several iterative steps. In Phase 3, the management actions retained for further study (as part of Phase 2) will be combined on a regional basis. In Phase 4, the regional solution sets will be integrated and refined to form comprehensive, systemwide solution sets. The solution sets will be compared to display potential ranges in costs (both initial investment costs and long-term costs), flood risk reduction benefits, and related resource benefits (environmental, water supply, others).

Two solution sets must be developed to provide a comparative basis for future alternatives development based on legislative requirements:

- Continuation of current practices and policies related to flood management (continuation of existing conditions)
- Restoring SPFC reliability by focusing on repairing structural deficiencies associated with SPFC facilities and their abilities to pass design flows.

Additional solution sets will be formulated with varying combinations of structural and nonstructural management actions. These solution sets will each have a different focus or way of addressing problems and opportunities, and will highlight the trade-offs and synergies associated with key decision points, such as the following:

- Investment
 - » *Larger initial investment, with smaller O&M costs*
 - » *Smaller initial investment, with larger O&M costs*
- Flood risk reduction benefits
- Related resource benefits (environmental, water supply, recreation, others)
- Levels of responsibility for implementation
 - » *State*
 - » *Federal*
 - » *Local*

Solution sets in the 2012 CVFPP will allow comparison of feasible approaches to developing a sustainable (socially, environmentally, financially) and integrated flood management system.

Technical Analysis

Development of systemwide solution sets will be challenging and will continue throughout the remaining phases. It will require input from numerous ongoing technical analyses (hydrology, hydraulics, levee integrity, economics, and others), and engagement with federal, local, and regional partners and interested parties. New technical data and information needed to fully evaluate plans on a systemwide scale are currently under development, but some will not be completed in time for use in the 2012 CVFPP. Consequently, the systemwide solution sets presented in the 2012 CVFPP will likely require further analysis, evaluation, and refinement before a single, preferred plan of action can be recommended for implementation.

The exact conditions of future climate change remain uncertain, but reductions in snowpack and shifts from snowfall to rainfall seem likely to increase flood peak flows and flood volumes. Increased intensity and frequency of major storms would further augment flood problems in California.

Continued Communication and Engagement

As described previously, there are a variety of opportunities to engage in development of the 2012 CVFPP. In upcoming phases, communications and engagement activities will be modified to reflect comments and feedback received from work group members and plan development team staff (see page 24 on Continual Improvement).

As indicated earlier, Phase 1 communications and engagement activities were originally focused on a goal of co-creating content for the 2012 CVFPP with work group members, often in real time. While DWR's commitment at this level was welcomed by members, the intensity proved to be more than what work group members could provide based on their available time. In response to member feedback, the plan development team developed content for presentation to and review by work group members, using a facilitated process. This approach was widely accepted by members during Phase 1 and will be a key component for subsequent phases, which will also include the introduction of publically noticed workshops. Periodic briefings to local jurisdictions, Native American Tribes, and other interested parties are anticipated to continue as a mechanism to build and maintain awareness of processes to develop the 2012 CVFPP.

Phase 2

Phase 2 communications and engagement activities will support compilation of potential management actions, definition of evaluation methods and screening criteria, and continued progress toward development of objectives for the 2012 CVFPP. One key strategy for Phase 2 is to encourage continued participation from existing work group members. As illustrated in the following figure, Phase 2 will kickoff and conclude with Regional Work Group meetings. Between Regional Work Group meetings, a series of public workshops and technically focused Topic Work Group meetings will be held. Established briefings to the Board, elected officials, study partners, local governments, and tribal

entities will continue, in coordination with other FloodSAFE programs and projects, as appropriate.

Two rounds of publically noticed workshops will be held to present and refine management actions and evaluation methods. The first round will focus on various categories of structural and nonstructural management actions. The second round will focus on groupings of management actions and evaluation methods for topics such as flood protection for small communities, or funding and cost sharing. Workshops will be open to the public and short in duration, and will not require long-term commitments by participants.

Also during this period, Topic Work Groups will be convened to address specific issues or challenges and receive input from recognized subject-matter experts. Issues to be addressed by Topic Work Groups in Phase 2 include the following:

- Financing and Revenue
- Urban level of Flood Protection
- Climate Change
- Reservoir Reoperation
- Economics

Some Topic Work Group meetings will be held in conjunction with other FloodSAFE programs and projects that are addressing common subjects and challenges.

Results of these workshops and Topic Work Group meetings will be used in Phase 3 as a mechanism to formulate an array of solution sets for presentation in the 2012 CVFPP.



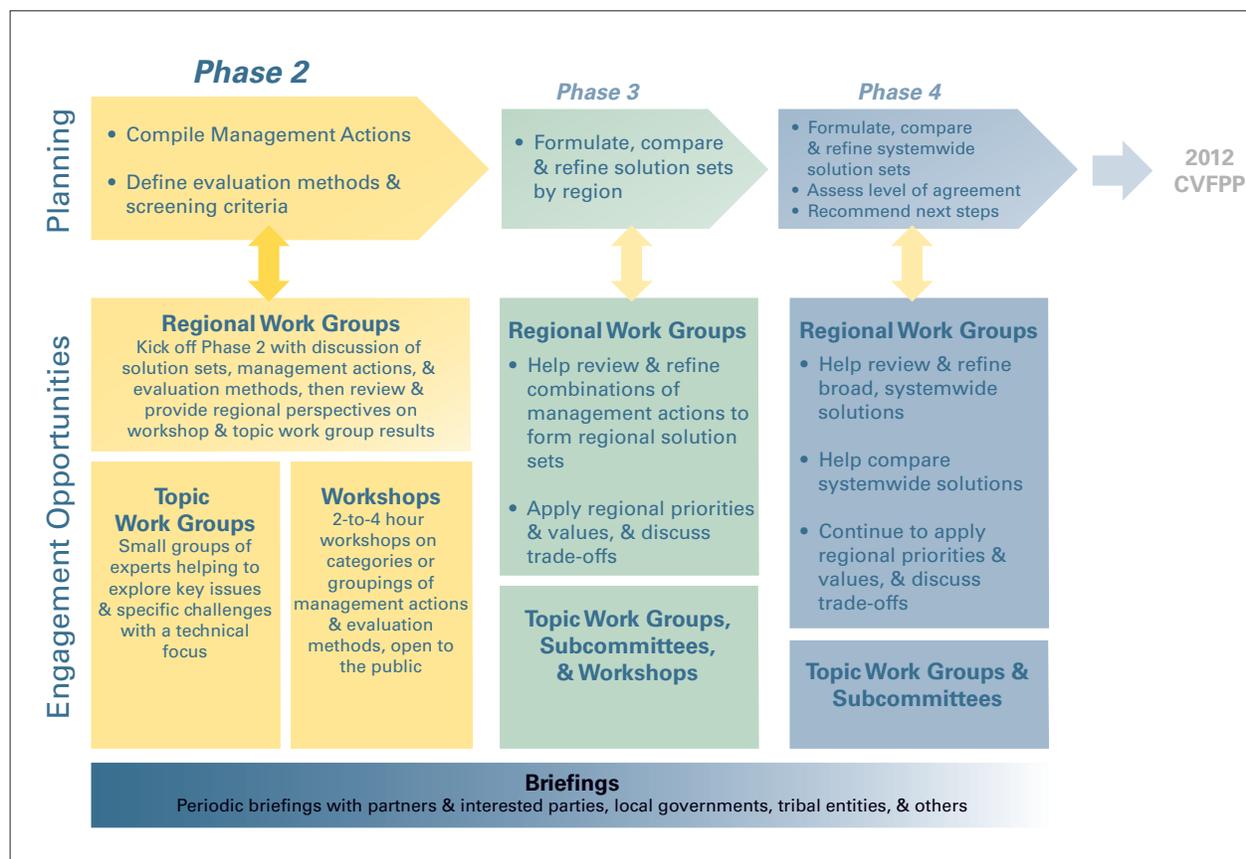
Levee Repair

Phase 3

Regional Work Groups, Topic Work Groups, workshops and briefings will continue to be used in Phases 3 and 4. Communications and engagement in these concluding phases of CVFPP development are anticipated to be very dynamic as solution sets evolve to reflect regional, subregional, and systemwide priorities. It is anticipated, for example, that the use of subcommittees will expand during these phases in two forms: cross-regional, for issues and challenges that apply to all regions; and subregional, for issues and challenges relative to a distinct geography.

During Phase 3, regional priorities and values will be applied to management actions identified during Phase 2 and grouped into regional solution sets. As part of this discussion, community success factors described by participants during Phase 1 will assist plan developers and work group members in discussion of potential trade-offs, such as the following:

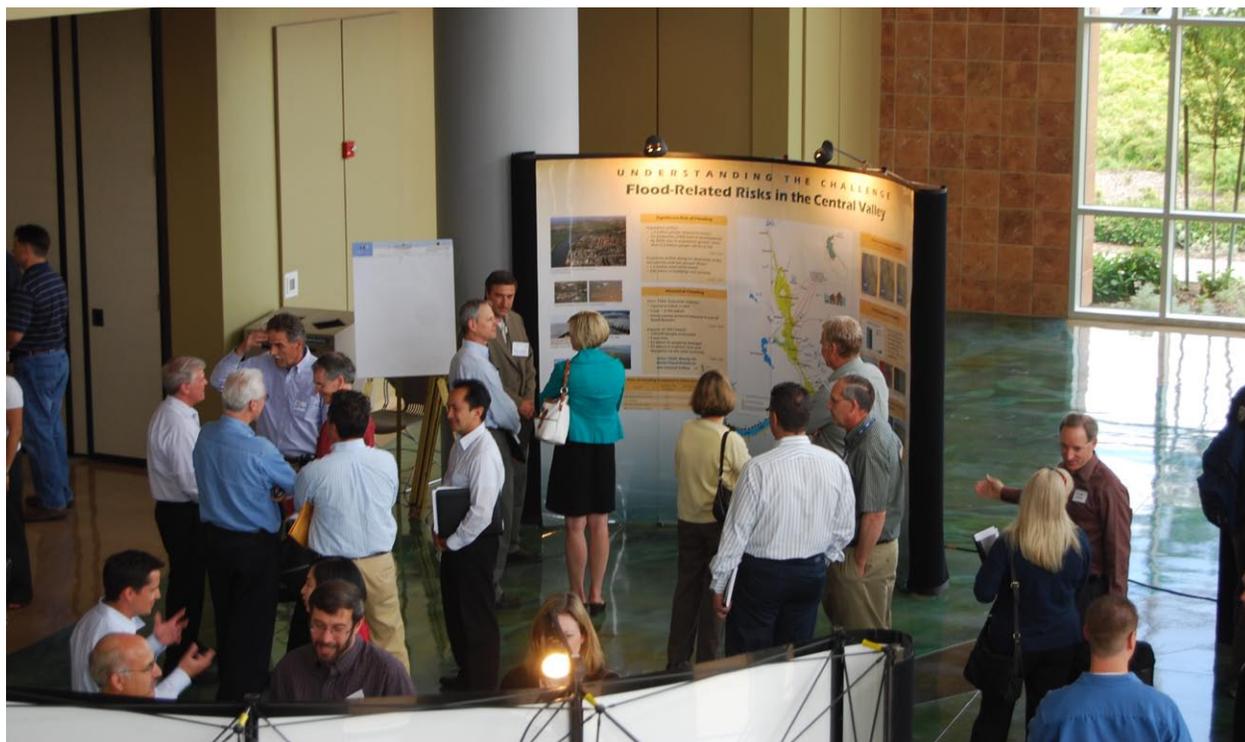
- Redirected impacts
- Acceptable range of implementation responsibility
- Levels of urban and non-urban flood protection
- Willingness to pay
- Viable financial instruments



Continued Opportunities to Participate in 2012 CVFPP Development

Phase 4

In Phase 4, the focus of Regional Work Group discussions will expand upon the regional aspects of plan development into a broader, systemwide dialogue. Similar to Phase 3, systemwide trade-offs will be explored to formulate and compare more comprehensive solution sets.



Regional Forum, June 2009

To find out more about how to participate, please visit www.water.ca.gov/cvfmp or contact the CVFPP Plan Development Team by e-mail: cvfmp@water.ca.gov



CVFPP Regional Conditions Work Group – Upper San Joaquin

ABBREVIATIONS AND ACRONYMS

Board	Central Valley Flood Protection Board
CVFMP	Central Valley Flood Management Planning
CVFPP	Central Valley Flood Protection Plan
CVIFMS	Central Valley Integrated Flood Management Study
CWC	California Water Code
Delta	Sacramento-San Joaquin Delta
DWR	California Department of Water Resources
FCSSR	Flood Control System Status Report
FloodSAFE	FloodSAFE California
Proposition 1E	Disaster Preparedness and Flood Prevention Bond Act
Proposition 84	Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act
SPFC	State Plan of Flood Control
USACE	U.S. Army Corps of Engineers



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Governor
Arnold Schwarzenegger

Natural Resources Agency
Lester Snow, Secretary

Department of Water Resources
Mark Cowin, Director

Department of Water Resources
The Natural Resources Agency
State of California

