

IWM Managers' Meeting

Integrating Water Management

February 2012

On February 29, 2012, the Department of Water Resources hosted an internal managers' meeting for leaders and managers in its Integrated Water Management (IWM) divisions—Statewide Integrated Water Management, Integrated Regional Water Management, Flood Management, Safety of Dams, and Bond Accountability.

This meeting set the wheels in motion to modify how IWM divisions do their business. The integrated water management approach will become intrinsic across water management, public safety, and environmental stewardship activities at all levels—systemwide, regional, and local.

This meeting supported IWM managers in continuing to strengthen their program delivery. It provided the foundation for current and future programs to maximize resources to deliver multiple benefits.

IWM divisions are poised to lead local, state and federal agencies to develop fully integrated solutions to meet the state's evolving needs for public safety, environmental stewardship, and economic stability. We will do this by improving the way we interact, communicate, and coordinate internally and externally; the way we allocate project resources and deliver projects; and the way we manage our programs and funding.

The time is right for IWM divisions to advance this new integrated approach. This meeting was the first step toward truly integrating water management.



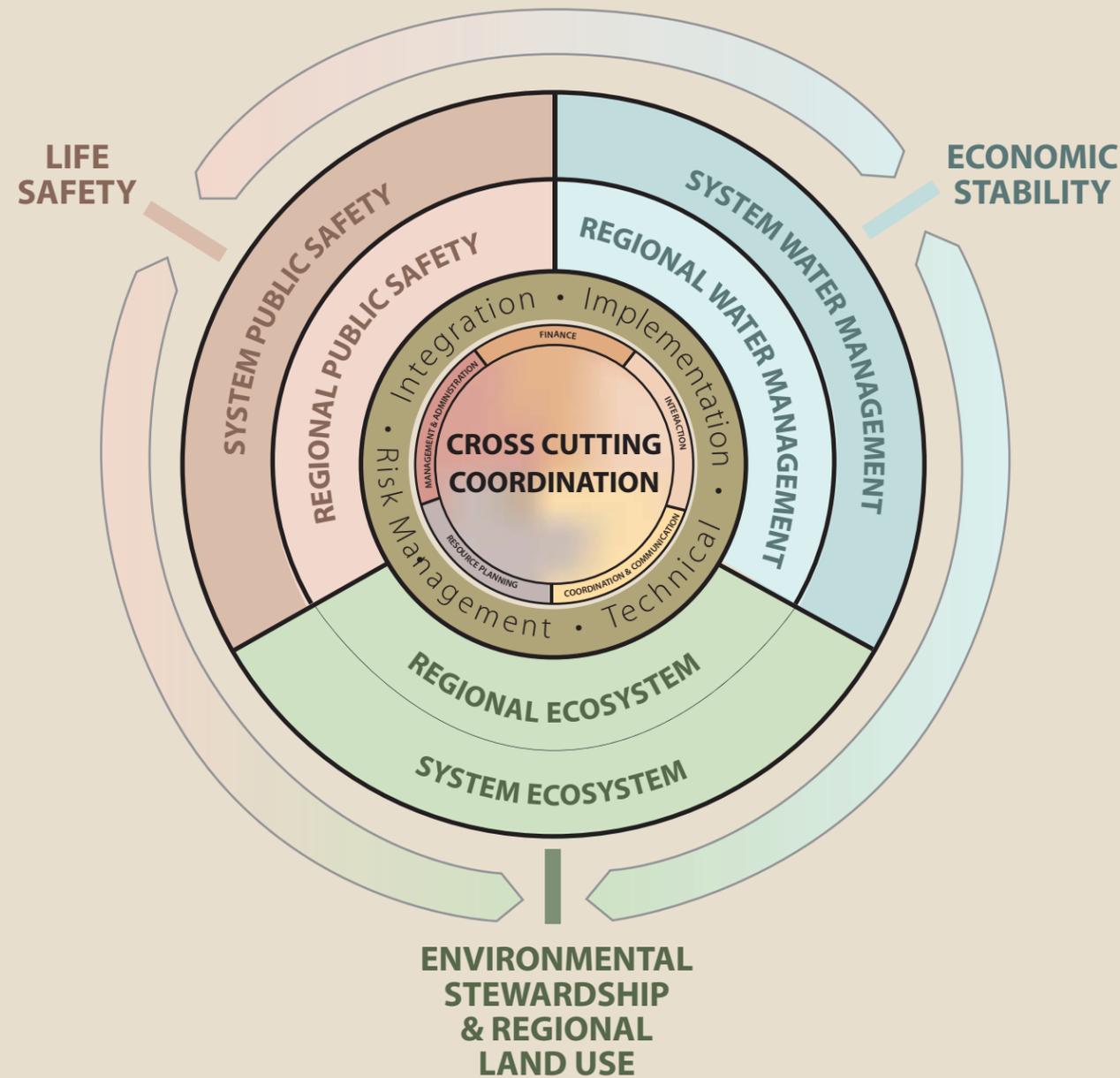
PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

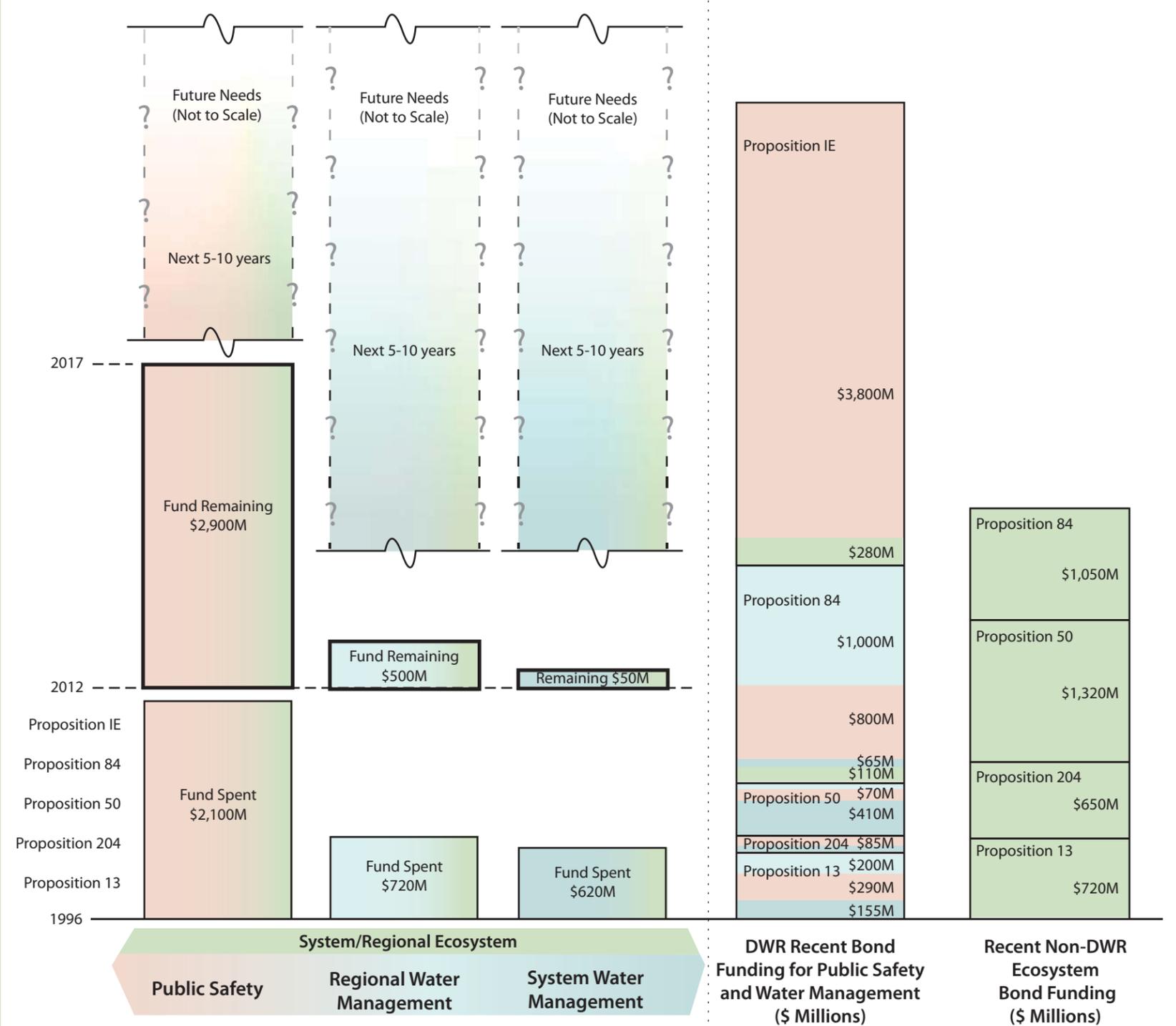
ECONOMIC STABILITY

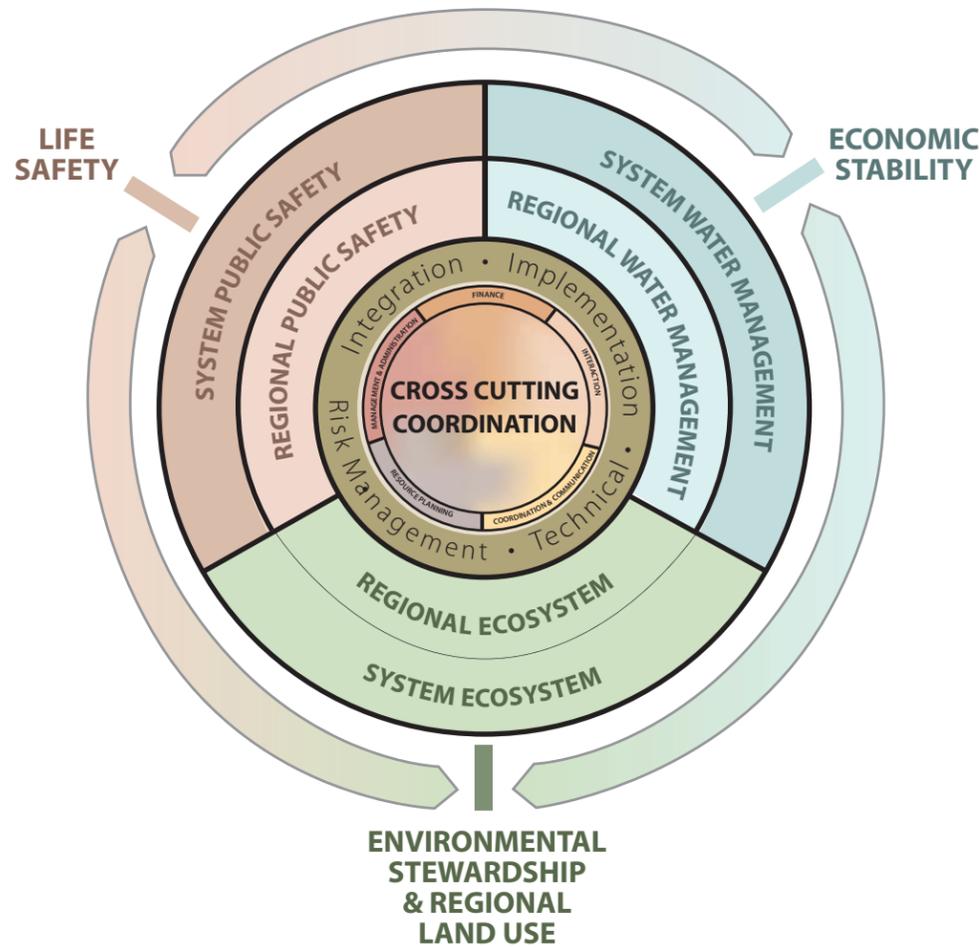


Program Value & Coordination



Program Funding Distribution





Resource Involvement: ● Low ○ Medium ● High

RESOURCING	PROGRAM					COORDINATION
	REGIONAL		SYSTEM			
	Regional Public Safety	Regional Water Management	Ecosystem System/Regional	System Water Management	System Public Safety	Cross-Cutting
DIVISION OF FLOOD MANAGEMENT						
Hydrology and Flood Operations Office (FA1)						
Flood Maintenance Office (FA2)						
Flood Risk Assessment and Mitigation Office (FA3, FA5)	?	?	?	?	?	?
Flood Projects Office (FA4)						
Central Valley Flood Planning Office (FA6)						
FloodSAFE Program Management Office (FA7)						
DIVISION OF STATEWIDE INTEGRATED WATER MANAGEMENT						
Water Use and Efficiency Branch (FA4)						
Strategic Water Planning Branch (FA6)	?	?	?	?	?	?
Statewide Infrastructure Investigations Branch						
Integrated Data and Analysis Branch (FA1)						
Project Services Office (FA7)						
DIVISION OF INTEGRATED REGIONAL WATER MANAGEMENT						
Regional Planning Branch						
Financial Assistance Branch						
Northern Region Office	?	?	?	?	?	?
North Central Region Office						
South Central Region Office						
Southern Region Office						
FloodSAFE Environmental Stewardship and Statewide Resources Office						
FESSRO - Delta	?	?	?	?	?	?
FESSRO - Conservation						
Division of Engineering						
Business Services						
Legal Services						
Central Valley Flood Protection Board						
U.S. Army Corps of Engineers						
Natural Oceanic and Atmospheric Administration - NWS	?	?	?	?	?	?
Federal Emergency Management Agency						
Levee Maintaining Agency/ Local Flood Agencies						
Resource Agencies (Environmental Protection Agency)						

PROGRAM		SYSTEM			COORDINATION
REGIONAL		Ecosystem	System Water Management	System Public Safety	Cross Cutting
Regional Public Safety INT Statewide Flood Management Planning IMP Regional Flood Management Plans O&M and Environmental Support USACE CVFPB Projects USACE CVFPB Studies Early Implementation Program Projects Flood Control Subventions Program Local Levee Assistance Program Stormwater Grants Delta Levee Subvention RM Flood Emergency Operations Flood Project Integrity and Inspections Flood Risk Awareness Hazard Mitigation National Flood Insurance Program Dam Safety	Regional Water Management INT Regional Coordination IMP Regional Partnership IRWM Planning & Implementation Grants Water Use Efficiency Grants Watermaster Services TEC CASGEM Land & Water Use Data CIMIS Conjunctive Water Management RM Snow Surveys	Ecosystem INT Conservation Strategy BDCP IMP Flood Corridor San Joaquin River Restoration Recreation Planning and Implementation	System Water Management INT Delta Emergency Response SWAN System Reoperation Water Transfers IRWM Strategic Plan Interstate Water Management DHCCP IMP Surface Storage Investigations SWP Operations Delta Special Projects TEC Water PIE IWM Economic Assessments Public Benefits Evaluation Water Recycling and Desalination Statewide Data Program RM Water Use Efficiency	System Public Safety INT Central Valley Flood Protection Plan IMP System Maintenance TEC System Feasibility Studies Floodplain Evaluation & Delineation Geotechnical System Performance Assessments Systemwide Flood Benefit Evaluation RM FERIS / CDEC F-CO Floodplain Management Dam Safety Development and Leadership	Cross Cutting Interaction California Water Plan Coordination & Communication Federal Advocacy Technical Publications Resource Planning Project Management Support Program Delivery Plans Management & Administration Bond Management System Bond Accountability Climate Change Sustainability Indicators Framework Environmental Stewardship Business Administration

Definitions: INT: Integration – Ensures consistent delivery through coordination among various programs.
 TEC: Technical – Information and data collection efforts to support program implementation.

IMP: Implementation – Includes the delivery of DWR programs and support for local programs through financial assistance programs.
 RM: Residual Management– Includes the planning, preparing and responding to changing conditions to protect lives and property.

*Gray Text – Not Included In Storybook



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



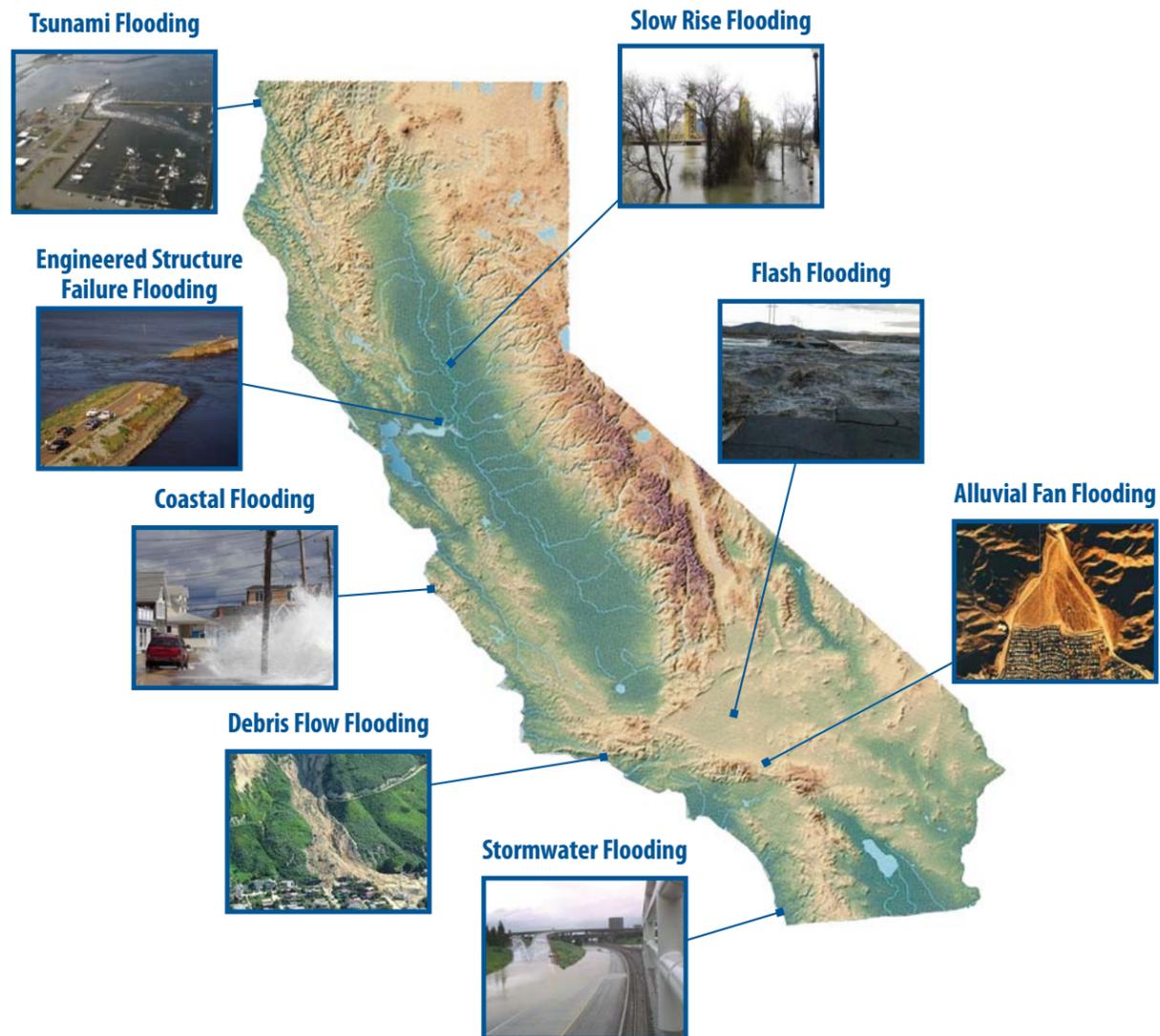
Statewide Flood Management Planning

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Management Planning & Conservation			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Understand California's flood management infrastructure and flood risk Coordinate with responsible federal, state, and local flood management agencies Advance integrated flood management strategies Develop recommendations to guide flood risk policies and investment decisions 			
Measurable Objectives	<ul style="list-style-type: none"> Publish Report on Flood Future: Improving and Sustaining Integrated Flood Management in California Publish Integrated Flood Management Component of California Water Plan 2013 including Integrated Flood Management Resource Management Strategy Develop support for Flood Future Report Recommendations Initiate Flood Future Report Phase 2 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> U S Army Corps of Engineers (USACE) Division USACE Sacramento, San Francisco and Los Angeles Districts FEMA 				
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> County Engineers Association of California Local Flood Management Agencies 				
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Bring Flood Management into Integrated Water Management by identifying barriers, gaps, and opportunities to IFM/IWM implementation. Increase public safety.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Flood Future Report Administrative Draft		Q2 2012				
Flood Future Report Public Review Draft		Q2 2012				
Integrated Flood Management Resource Mgmt Strategy		Q3 2012				
Work Plan for Phase 2 Flood Future Report		Q3 2012				
Final Flood Future Report		Q4 2012				
Flood in California Water Plan		Q1 2013				
Lead	Terri Wegener	twegener@water.ca.gov				
Website	www.water.ca.gov/sfmp					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Flood Future: Recommendations for Managing California's Flood Risk				
	<input checked="" type="checkbox"/> Brochure(s)	Flood Future Policy Brochure, Flood Future Report Highlights				
	<input checked="" type="checkbox"/> Fact Sheet(s)	Highlights, Recommendations, Financing, IFM in California				
	<input checked="" type="checkbox"/> Multimedia(s)	Video Clip: Flood Future: Flood Management in California				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Admin and Public Review Draft of Flood Future Report, CWP Flood Work Products					
Public Meetings / Open Houses	Flood Future Workshop in each CWP Region; multiple public workshops in key areas					
Interactive Workshops	Webinars on Flood Future Report implementation, Feedback with key stakeholders					
Standing Workgroups	California Water Plan Flood Caucus, CEAC Flood Needs Workgroup					
Other	DWR-USACE Project Development Team, FEMA Coordination, Interviews and feedback groups with local agencies					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Climate change Project Management Development IRWM Grant Programs 					
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Regional Forums IRWM Strategic Plan Bond Accountability IRWM Grant Programs 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
TOTAL FUNDING						

PROBLEM

7 Million People + \$600 Billion Assets Exposed to Flooding



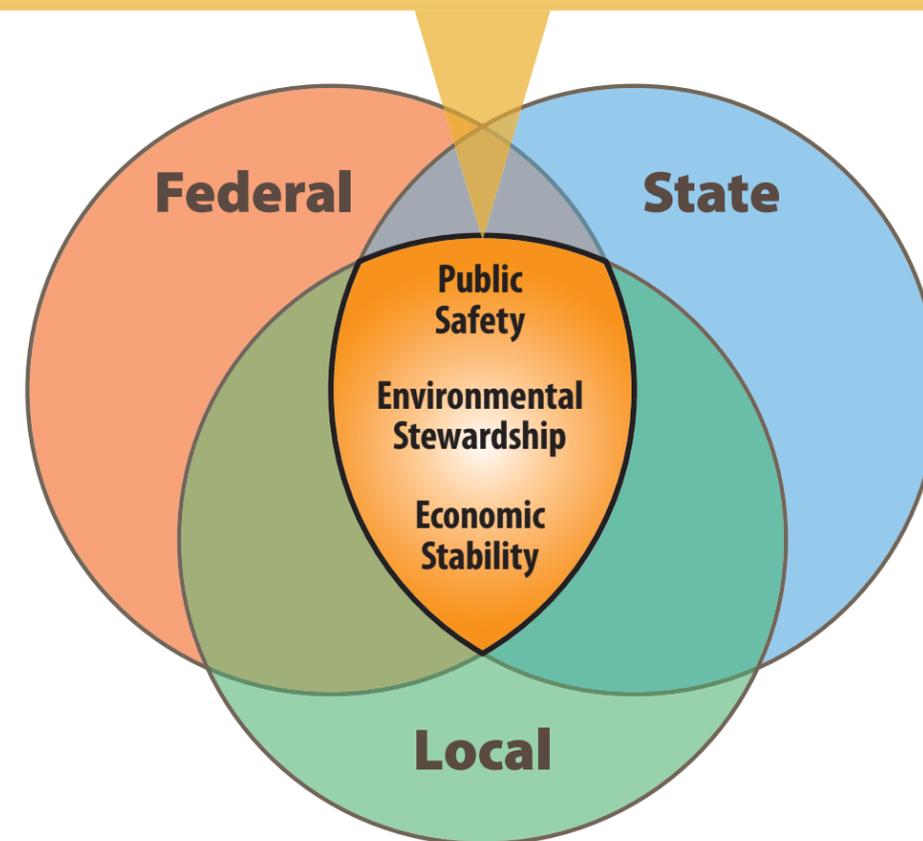
Flood Risk is Statewide

SOLUTION

Implement Integrated Flood Management



- Be Ready to Respond
- Understand and Quantify Risks
- Encourage Responsible and Integrated Planning
- Incentivize Sustainable Solutions
- Establish Reliable Funding



Regional Flood Management Plans

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Management Planning and Conservation			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To develop nine Regional Flood Management Plans that prioritize projects that achieve flood risk reduction in the Central Valley through:</p> <ul style="list-style-type: none"> Collecting existing data to identify flood hazards in each of the nine Levee Flood Protection Regions; Proposing regional improvements; Working with locals to develop regional priorities; Developing a Financial Plan to fund the highest priority projects. 			
Measurable Objectives	<ul style="list-style-type: none"> Engage local flood management entities to help prioritize projects and develop financing approaches through a variety of venues, including workshops and 1:1 meetings; Develop nine Regional Atlases; Develop nine Regional Flood Management Plans that include prioritized list of projects and financing plan. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Five Central Valley urban flood control agencies 		<ul style="list-style-type: none"> Central Valley Flood Protection Board (CVFPB) 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> 100+ Central Valley Local Maintaining Agencies (Reclamation Districts, Levee Districts, etc.) 		<ul style="list-style-type: none"> Central Valley cities and communities Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	More frequent operations of floodplains may lead to increases in groundwater recharge			
<input checked="" type="checkbox"/> Improve Water Quality	By reducing the frequency of flooding of lands that may have pesticide or other types of contamination			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Promotes multi-benefit projects through Conservation Framework			
<input checked="" type="checkbox"/> Improve Flood Management	Identifies feasible regional flood management projects and local cost share			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing policies, institutions, revenue generation, etc., related to flood risk coordination protocols, financial frameworks, and adaptive flood management			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Regional Flood Management Plan Workshops (first to last region)			Q2 2012 to Q4 2012				
Regional Flood Management Plans (first to last region)			Q4 2012 to Q2 2013				
Lead	Eric Koch		ekoch@water.ca.gov				
Website							
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	9 Regional Plans					
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input checked="" type="checkbox"/> Multimedia(s)	Internet webpage on DWR's website					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	Comments submitted to the CVFPB; CVFPB directions to DWR						
Public Meetings / Open Houses	Presentations to the CVFPB						
Interactive Workshops	Meet with key local flood agencies in order to develop a list of regional priorities and a financing plan.						
Standing Workgroups							
Other	Presentations/briefings to key local agencies						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> Conservation Strategy –environmental objectives and permitting strategies Floodplain Evaluation and Delineation Flood Project Inspections and Vulnerability – Atlas development support Regional Planning outreach/communication Regional Planning technical support Regional Plan development 						
Support To Other IWM Topics	<ul style="list-style-type: none"> Regional Flood Management Plans Area Flood Planning Floodplain Management 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
TOTAL FUNDING							

REGIONAL FLOOD MANAGEMENT PLANNING INITIATIVE

Through the regional planning process, FloodSAFE will work with local partners to identify and prioritize proposed flood system improvements for each of the nine flood planning regions identified in the Central Valley Flood Protection Plan (CVFPP).

Goals and Objectives

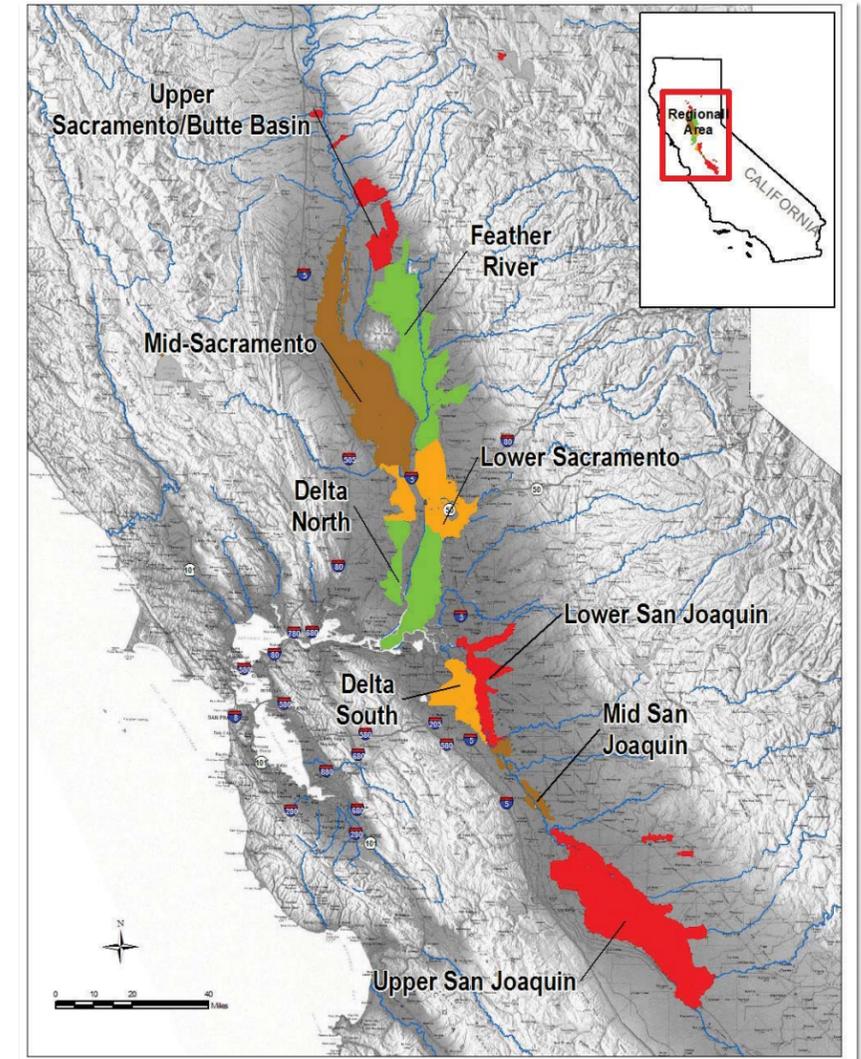
The goal of the initiative is to develop a Regional Plan for each of the nine flood planning regions. The objectives are:

1. Develop a Regional Atlas for each region by compiling existing flood information.
2. Identify and prioritize flood projects within each region consistent with the CVFPP.
3. Develop a Financing Plan for each region.

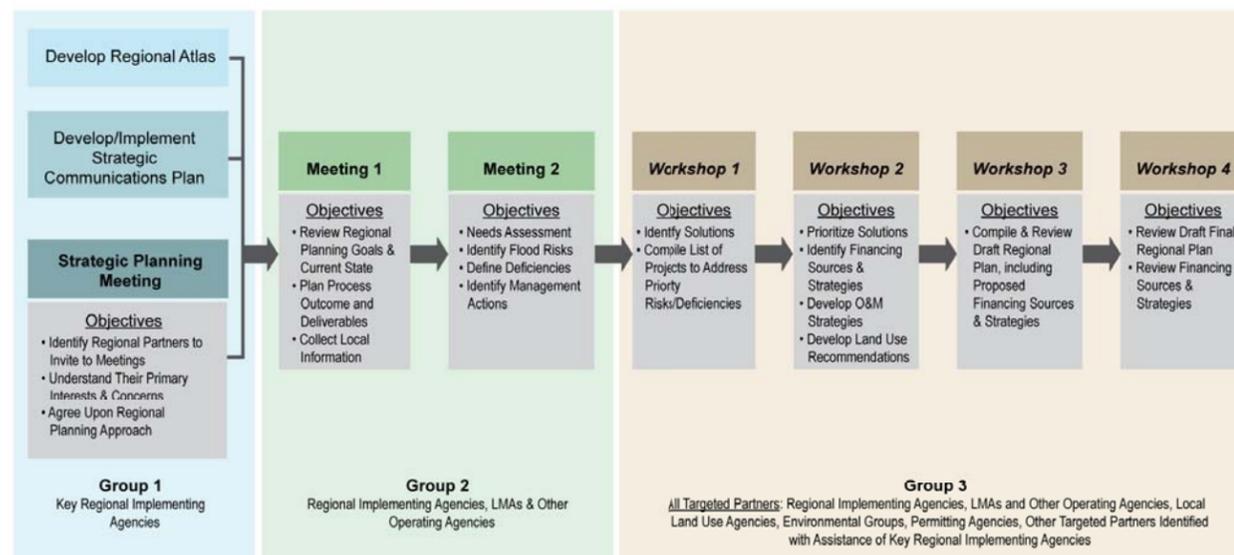
Scope and Approach

The regional planning initiative encompasses two primary elements:

1. The Regional Atlas will display graphic presentation depicting the flood risk characteristics of the region.
2. The Regional Plans will be developed with input from regional partners and will represent a plan for each region to improve its flood protection.



Approach to Developing Regional Plans



Program Manager: Eric Koch
Division of Flood Management

Flood System Operations and Maintenance

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Operations and Maintenance and Environmental Stewardship			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Through routine and non-routine maintenance activities: maintain channel and bypass design capacity, ensure levee integrity and operability of hydraulic structures, effectively manage flood control system in a manner that protects and enhances the environment. Routine maintenance for levees and channels includes mowing and burning for vegetation control, grouting rodent holes, and hand clearing around endangered species. Non-routine maintenance includes rehabilitation of hydraulic control structures and pumps, sediment removal and repair of significant erosion sites. Environmental initiatives include Corridor Management Strategy and the Small Erosion Repair Program.			
Measurable Objectives	<ul style="list-style-type: none"> • Complete inspection of channels, levees, and structures after flood season to identify repairs to be completed prior to next flood season • Complete routine maintenance activities for channels, levees and structures • Conduct hydraulic evaluations of channels to monitor conveyance capacity • Maintain equipment in good and safe operating condition • Promote system sustainability through vegetation management 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • Central Valley Flood Protection Board • Local Maintaining Agencies 		<ul style="list-style-type: none"> • National Marine Fisheries Service • US Fish and Wildlife Service • Department of Fish and Game • US Army Corps of Engineers • State and Regional Water Quality Control Boards 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> • US Army Corps of Engineers 		<ul style="list-style-type: none"> • Counties and Cities 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Manage the flood control system in a manner that protects and enhances the environment; promote environmental stewardship, including implementation of the Corridor Management Strategy			
<input checked="" type="checkbox"/> Improve Flood Management	Maintain flood conveyance capacity, levee and structure integrity, conduct routine maintenance			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
PEIR for Central Valley Flood Protection Plan		Q3 11-12				
Flood System Repair Guidelines		Q1 12-13				
Draft Corridor Mgmt. Plan for Lower Feather River		Q4 11-12				
Flood System Repairs Pilot Project		Q4 11-12				
Systemwide O&M Improvement Program PMP		Q4 11-12				
Willow Slough Bypass Draft Corridor Mgmt. Plan		Q2 12-13				
Sacramento R. Bank Protection Program – two State repair sites		Q2 12-13				
Lead	Noel Lerner, Chief, Flood Maint. Office		nlerner@water.ca.gov			
Website						
Key Program Information Materials		<input type="checkbox"/> Report(s)				
		<input type="checkbox"/> Brochure(s)				
		<input type="checkbox"/> Fact Sheet(s)				
		<input type="checkbox"/> Multimedia(s)				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities		Lower Feather R. Corridor Mgmt. Plan, PEIR for CVFP Plan, PEIR for SERP*				
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups		Interagency Flood Mgmt. Collaborative, Lower Feather R. Corridor Mgmt. Plan, SERP*				
Other		SERP*: Small Erosion Repair Program				
Internal Coordination (11/12 only)						
Support From Other IWM Topics		<ul style="list-style-type: none"> • Northern District – hydraulic modeling, environmental surveys • FESSRO – Conservation Framework/Strategy 				
Support To Other IWM Topics		<ul style="list-style-type: none"> • PEIR for Central Valley Flood Protection Plan • FESSRO – Conservation Framework/Strategy • Emergency Response Environmental Coordination 				
Budget & Funding (in \$1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input checked="" type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
TOTAL FUNDING						

Flood System Operations and Maintenance

Through routine and non-routine maintenance activities, maintain channel and bypass design capacity, ensure levee integrity and operability of hydraulic structures, effectively managing the flood control system in a manner that protects and enhances the environment. Routine maintenance for levees and channels includes mowing and burning for vegetation control, grouting rodent holes, and hand clearing around endangered species. Non-routine maintenance includes rehabilitation of hydraulic control structures and pumps, sediment removal and repair of significant erosion sites. Environmental initiatives include Corridor Management Strategy and the Small Erosion Repair Program.



- : Program Manager - **Noel Lerner**
- : Office - **Flood Maintenance**
- : Division - **Division of Flood Management**
- : Primary Goal - **Public Safety**
- : Geographic Scope - **Regional/Local**
- : Functional Area - **Operations and Maintenance and Environmental Stewardship**
- : Internal Coordination Emphasis - **Implementation**



Non-Routine Maintenance



Routine Maintenance



Environmental Initiatives & Support



Evaluations



Routine Maintenance

- 293 miles of levee vegetation management and repair
- 1200 miles of channel vegetation management
- 4 pumping plants
- 11 weirs
- 2 outfall gates
- 50 miles of canals/interceptors
- 11 bridges in Sutter Co. crossing drainage channels
- Rodent control

Non-Routine Maintenance

- Freemont Weir sediment removal - 920K cubic yards
- Tisdale Bypass sediment removal - 1.8M cubic yards
- Willow Slough fish ladder and gate replacement
- Weir #2 fish ladder and weir replacement
- All weather levee roads
- Sutter Pumps 1, 2, and 3 pump, motor, controller, and backup generator rehabilitation project
- Erosion repairs - Willow Slough, Butte Creek, Cache Creek, Sacramento Bypass, Wadsworth Canal
- Outfall gates rehabilitation - Knights Landing, Butte Slough



Environmental Initiatives and Support

- Corridor Management Strategy - Lower Feather River Corridor Management Plan (CMP), Small Erosion Repair Program (SERP), Willow Slough Bypass rehabilitation
- Interagency Flood Management Collaborative
- Wildlife, habitat and wetland delineations for routine maintenance and project permits
- Enhanced environmental support for emergency response
- Colusa State Recreation Area -- 137-acre habitat restoration project partnered with Department of Parks and Recreation

Evaluations

- Hydraulic models for channels assessing flow capacity
- Levee integrity inspections and evaluations
- Bank/levee erosion studies
- Sycamore Creek Diversion Channel Erosion Study
- Cache Creek Settling Basin Sediment Transport, Flow, and Mercury Characterization Studies
- Hydraulic structures and bridge integrity inspections



USACE/CVFPB Studies

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation and Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Reduce flood risk, damage, and loss of life through: <ul style="list-style-type: none"> Investigating flood risk, damage, and loss of life alternatives prior to design of projects through Feasibility Studies. Revise project alternatives after a project has been initiated through General Reevaluation Reports to enhance reduction of flood risk, damage, and loss of life. 			
Measurable Objectives	<ul style="list-style-type: none"> Flood risk, damage, and loss of life reduction Feasibility Cost Sharing Agreements with local and federal partners. Projects recommended by the study that closely match local preferences and still follow the State Statewide Investment Strategy Secure maximum federal cost share for projects recommended by the study. Secure maximum federal credit on projects completed prior to study completion to fund further projects in the related basin therefore reducing the State's contribution on authorized projects. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USACE Local Flood Control Agencies 		<ul style="list-style-type: none"> CVFPB 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Central Valley cities and communities Joint powers agencies and levee maintenance agencies 		<ul style="list-style-type: none"> Central Valley cities and communities not represented by a joint powers agency. 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	In an effort to reduce flood risk and damage and to reduce the risk of loss of life, reservoir and or system reoperations may be recommended as alternatives by the study.			
<input checked="" type="checkbox"/> Increase Water Supply	More frequent activation of floodplains through expansions of bypasses may lead to increases in groundwater recharge.			
<input checked="" type="checkbox"/> Improve Water Quality	By reducing the frequency or chance of flooding to reduce flooding of lands that may have pesticide or other types of contamination.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Opportunities to create new ecosystem and provide ecosystem restoration are included in some of the flood risk reduction alternatives such as setback levees that are recommended by the study.			
<input checked="" type="checkbox"/> Improve Flood Management	A primary objective of all the studies is to improve flood management, which is considered in each alternative chosen.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	Program communicates with such programs as Central Valley Floodplain Evaluation and Delineation and Urban Levee Evaluation to ensure State-developed models and data are not duplicated by studies.			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Sutter Basin Feasibility Study / Study Completion			Q3 2013				
Yuba River General Reevaluation Report (GRR)/GRR Completion			Q3 2014				
West Sacramento GRR / GRR Completion			Q3 2014				
Lower San Joaquin River Feasibility Study / Study Completion			Q4 2017				
Lower Cache Creek Feasibility Study/ Study Completion			Q4 2017				
Lead		Robert E. Scarborough	rscarbor@water.ca.gov				
Website							
Key Program Information Materials		<input checked="" type="checkbox"/> Report(s)	Five- year plan, Accomplishments, and CVFPB meeting updates.				
		<input type="checkbox"/> Brochure(s)					
		<input checked="" type="checkbox"/> Fact Sheet(s)	Federal appropriations templates and Project Binders.				
		<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities		Central Valley Flood Protection Board and Public Scoping Meetings during studies.					
Public Meetings / Open Houses		CVFPB Presentations					
Interactive Workshops							
Standing Workgroups							
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics		<ul style="list-style-type: none"> Floodplain Evaluation & Delineation Central Valley Floodplain Evaluation and Delineation Levee Evaluations program Floodway Corridor Program Yuba Feather Flood Protection Program United States Corps of Engineers Projects Program 					
Support To Other IWM Topics		<ul style="list-style-type: none"> CVFPP 					
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding			<input checked="" type="checkbox"/> General Fund				
			<input type="checkbox"/> Bond (Prop 13)				
			<input type="checkbox"/> Bond (Prop 50)				
			<input checked="" type="checkbox"/> Bond (Prop 1E)				
			<input type="checkbox"/> Bond (Prop 84)				
			<input type="checkbox"/> Fees				
			<input type="checkbox"/> Reimbursable				
			<input type="checkbox"/> In-Kind Support				
			<input type="checkbox"/> Other				
TOTAL FUNDING							

USACE/CVFPB Studies

To determine whether a project is viable, cost-effective, and ensures the State of California's decision to develop a flood damage and loss of life reduction project, studies are undertaken in partnership with the U.S. Army Corps of Engineers (USACE) and local agencies. The State is evaluating 13 different study areas in the California Central Valley. Studies investigate and recommend solutions to flood system improvement problems following a determination of State interest.

Study Types:

- **Feasibility Studies:** address flood improvement needs in a systems context and explore a full range of alternatives in developing solutions;
- **Limited Reevaluation Reports (LRR):** reevaluate limited project alternatives after a project has already begun design and construction work; and
- **General Reevaluation Reports (GRR):** reevaluate project alternatives after a project has been authorized.

Study Cost-Share:

- Federal: 50 percent
- State: 25 percent (All or portions of the cost-share can be IKC)
- Local: 25 percent (All or portions of the cost-share can be IKC)

IKC - Studies allow the State to secure In-Kind Contributions (IKC) for work performed by the non-federal sponsors for the study.

Study Funding:

- Proposition 1E
- Proposition 13
- Proposition 84
- General Fund
- U.S. Army Corps of Engineers
- Local Agencies and/or Organizations
- American Recovery and Reinvestment Act of 2009

Program Manager: Robert E. Scarborough
Flood Projects Office
Division of Flood Management



LEGEND:
 Agreement Executed
 Agreement Pending



USACE/CVFPB Projects

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Protection Projects and Grants			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	USACE Coordinated Projects, under the authority of the Central Valley Flood Protection Board (CVFPB) and in cooperation with the United States Army Corps of Engineers (USACE) and local agencies is involved in: <ul style="list-style-type: none"> Managing the implementation of the capital improvement projects to achieve flood risk reduction; Managing funding, crediting and reimbursing authorized funds whose costs are shared among federal, state and local government; Planning, designing, acquiring land, and constructing structural and non-structural federal flood control projects in the Central Valley. 			
Measurable Objectives	<ul style="list-style-type: none"> Improve level of flood protection through USACE and CVFPB partnering flood control projects to urban or flood risk critical areas in the Sacramento-San Joaquin Valley. Flood control projects implemented and completed on schedule. Adequate funding obtained to complete projects on schedule. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> CVFPB California Department of Water Resources (DWR) USACE Sacramento Area Flood Control Agency (SAFCA) Marysville Levee District Kaweah Delta Water Control District Others 		<ul style="list-style-type: none"> CVFPB State Department of Fish and Game (DFG) US Department of Fish and Wildlife Services (FWS) US Environmental Protection Agency (EPA) State Water Resources Control Board (SWRCB) California Air Resources Board (CARB) 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> US Bureau of Reclamation American River Flood Control District 		<ul style="list-style-type: none"> State Lands Commission USACE Real Estate Division State of California DWR Real Estate 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Improve floodwater conveyance (stage, flow, timing) and Folsom Dam operations within the American River and Sacramento River flood management system.			
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Achieve Federal- and State-compatible beneficial functions and values of flood risk reduction that is integrated with habitat protection and agricultural land preservation.			
<input checked="" type="checkbox"/> Improve Flood Management	Improve coordination with USACE and local agencies to better facilitate federal projects that provide flood risk reduction benefits.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Project management for large implementation projects requires additional staff resources and funding.			
<input checked="" type="checkbox"/> Fiscal	Collaborate with Bond Management, legislature, federal advocacy and Department of Fiscal Services to obtain adequate project funding.			
<input checked="" type="checkbox"/> Communication	Work together with the Public Affairs Office and other public outreach functions to deliver public message regarding to the FloodSAFE and flood risk reduction projects.			
<input checked="" type="checkbox"/> Personnel Development	Provide training and tools to project management staff to improve effectiveness and efficiency.			

Milestone & Timeline						
Key External Milestone / Deliverable				Date (by Quarter / Year)		
West Sacramento Slip Repair complete				Q3 2012		
American River Common Features: R6 and Howe Ave begin construction.				Q3 2012		
South Sacramento County Streams: Complete construction on Floodwall.				Q4 2012		
Mid-Valley Levee Reconstruction: Final plans and specs for Area 3 complete.				Q4 2012		
Folsom Dam Modification - Joint Federal Project: Control Structure Complete				Q3 2014		
Natomas Basin Design Construction: Execute PCA with Federal Government.				Q1 2014		
Folsom Dam Modification - Joint Federal Project: Auxiliary Spillway Complete				Q4 2017		
Lead	Wilbur Huang		whuang@water.ca.gov			
Website	http://www.water.ca.gov/floodmgmt/fpo/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	FloodSAFE Strategic Plan - Public Review Draft, Flood Warnings: Responding to California's Flood Crisis				
	<input checked="" type="checkbox"/> Brochure(s)	Implementing the FloodSAFE California Initiative. An Integrated, System-Wide Approach for Sustainable Flood Risk Management in California				
	<input checked="" type="checkbox"/> Fact Sheet(s)	FloodSAFE Overview, Central Valley Flood Management Planning Program				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Comments submitted to CVFPB or DWR.					
Public Meetings / Open Houses	Presentations to the CVFPB					
Interactive Workshops	Presentations/Stakeholder workshops through the USACE to local jurisdictions, interest-based-organizations, other stakeholder groups, and other interested parties.					
Standing Workgroups						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Federal Advocacy Central Valley Flood Protection Plan System Feasibility Studies Floodplain Risk Management 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Regional Flood Plans Early Implementation Program Flood Operation and Maintenance State Systemwide Flood Planning 					
Budget & Funding (in \$1,000s)						
Forecasted Budget				11/12	12/13	13/14
Expected Funding (Planned Bond Expenditure, including anticipated local reimbursable share)				14/15	15/16	
<input type="checkbox"/> General Fund						
<input type="checkbox"/> Bond (Prop 13)						
<input type="checkbox"/> Bond (Prop 50)						
<input checked="" type="checkbox"/> Bond (Prop 1E) (thousands)						
<input type="checkbox"/> Bond (Prop 84)						
<input type="checkbox"/> Fees						
<input type="checkbox"/> Reimbursable						
<input type="checkbox"/> In-Kind Support						
<input type="checkbox"/> Other						
TOTAL FUNDING						

USACE/CVFPB Projects

The USACE and CVFPB Projects Program – under the authority of the Central Valley Flood Protection Board (CVFPB) and in collaboration with the United States Army Corps of Engineers (USACE) and local agencies – manages the implementation of federal flood control projects to achieve flood risk reduction in the Central Valley.



Marysville Ring Levee Reconstruction Project

Description: Project will increase the level of flood protection for the City of Marysville by improving the existing levee system by constructing cut-off walls and levee strengthening and reshaping features.
Partners: Federal (USACE), State (CVFPB, DWR), Local (MLD, RD 784, City of Marysville)
Funding: Total Cost: \$162 M, Federal: \$105 M, State: \$40 M, Local: \$17 M
Area Protected: 3.6 sq. mi. (Marysville) **Population Protected:** 12,000



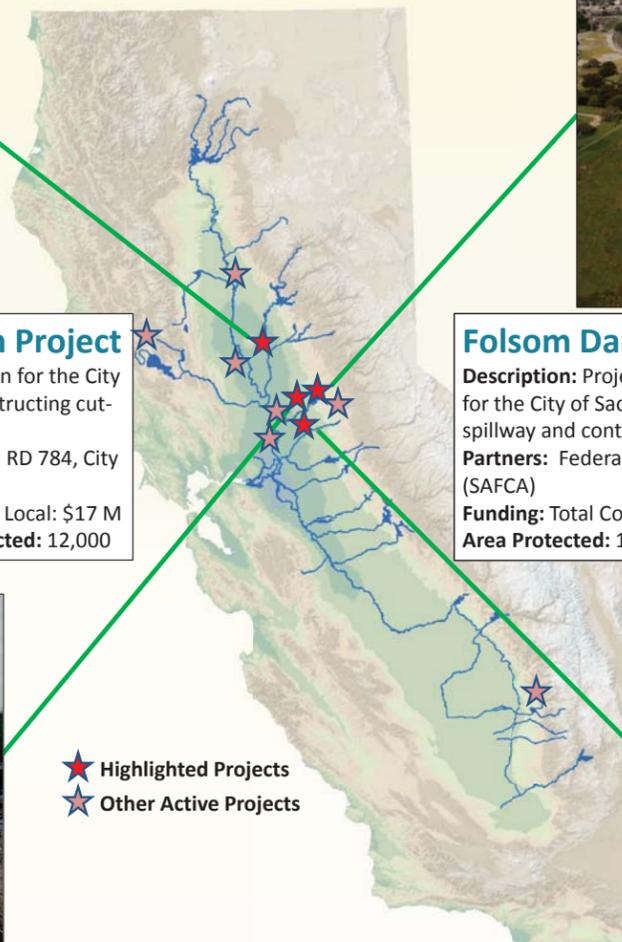
Folsom Dam Modification (Joint Federal Project)

Description: Project will provide a higher level of dam safety and flood protection for the City of Sacramento and surrounding area by constructing an auxiliary spillway and control structure southwest of Folsom Dam.
Partners: Federal (USACE, Bureau of Reclamation), State (CVFPB, DWR), Local (SAFCA)
Funding: Total Cost: \$833 M, Federal: \$541 M, State: \$205 M, Local: \$88 M
Area Protected: 100+ sq. mi. (Sacramento, etc.) **Population Protected:** 200,000+



American River Common Features Project

Description: Project will improve the levee system along the lower American River, the Sacramento River and the Natomas Cross Canal.
Partners: Federal (USACE), State (CVFPB, DWR), Local (ARFCD, SAFCA)
Funding: Total Cost: \$282 M, Federal: \$212 M, State: \$49 M, Local: \$21 M
Area Protected: 100+ sq. mi. (Sacramento, etc.) **Population Protected:** 100,000+



★ Highlighted Projects
 ★ Other Active Projects



South Sacramento County Streams Project

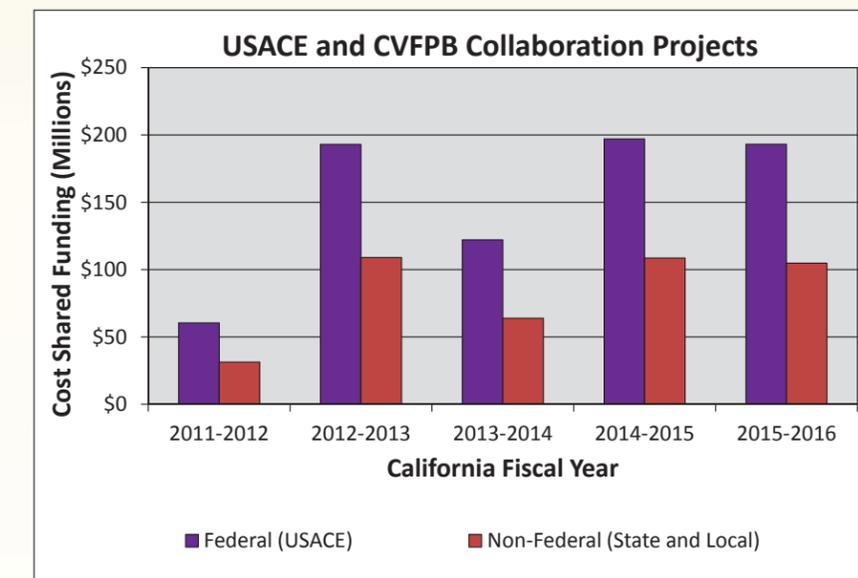
Description: Project will increase the level of flood protection from 1-in-50-year to 1-in-200-year for the urbanized area of Sacramento County, an area to the south and east of the City of Sacramento.
Partners: Federal (USACE), State (CVFPB, DWR), Local (SAFCA)
Funding: Total Cost: \$105 M, Federal: \$68.5 M, State: \$24.5 M, Local: \$12 M
Damage Prevented: \$715 M for 100-yr Flood, \$2 Bil for 200-yr Flood

2011 ACCOMPLISHMENTS:

- **American River Common Features:** R5 Construction Complete. R6 and Howe Ave Construction Sites Awarded.
- **Folsom Dam Modification (JFP):** New auxiliary spillway control structure 15% complete, downstream chute, stepped spillway and stilling basin design (65%), upstream approach channel design (35%).
- **Marysville Ring Levee Reconstruction:** Started Phase 1 and expect completion in 2012.
- **Mid-Valley Area Levee Reconstruction:** Completed 100% design for Contract Area 3 - Sites 12, 12a, and 13.
- **South Sacramento County Streams:** Awarded a contract to construct 2,850 ft. of floodwall along Morrison Creek and UPRR tracks.
- **West Sacramento Levee Reconstruction:** Two (North and South) slip repairs were completed

FUNDING:

- The State and local sponsor share the project cost with the USACE.
- Proposition 1E: Disaster Preparedness and Flood Protection Bond Act of 2006.



Program Manager: Wilbur Huang, PE, CFM
 Flood Projects Office
 Division of Flood Management



US Army Corps of Engineers



Early Implementation Program

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Protection Projects and Grants			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Repair, rehabilitate, reconstruct or replace of levees, weirs, bypasses and facilities of the State Plan of Flood Control (SPFC) Improving or adding facilities to the SPFC to increase levels of flood control protection for urban areas Applies to only certain portions of the Central Valley and some adjacent areas 			
Measurable Objectives	<ul style="list-style-type: none"> Guidelines finalized and published January 2011 Project Solicitation Package (PSP) released January 2011 Execute EIP funding agreements by August 2012 Complete construction by 2015 Project closeout completed by 2016 Closeout EIP by 2016 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Local agencies/applicants that apply for project funding. can be a joint powers authority (JPA) State of California, Department of Water Resources, Division of Flood Management Central Valley Flood Protection Board (CVFPB) 		<ul style="list-style-type: none"> State of California, Department of Water Resources Central Valley Flood Protection Board (CVFPB) United States Army Corp of Engineers (USACE) Federal Emergency Management Agency (FEMA) US Department of Fish and Wildlife Services (USFWS) State Department of Fish and Game (DFG) County, City and Local Agencies 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Local Levee Districts through Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Agreements USACE State, County and City Agencies 		<ul style="list-style-type: none"> State of California, DWR, Department of Engineering, Real Estate & Geodetic Branches State of California, Department of General Services USACE, Real Estate Division 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Reduce flood recurrence interval by use of setback levees to improve flood corridor functions			
<input type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality	Restore floodplain riparian and wetland habitat that can provide improved water quality depending on location			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Achieve Department mission and goals of bond measures - achieve compatible beneficial functions and values of flood risk reduction integrated with habitat protection and agricultural land preservation			
<input checked="" type="checkbox"/> Improve Flood Management	Emphasis on better managing flood risk related to the State-Federal flood protection in the Central Valley			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	The existing program will transition into the Urban High Risk Flood Reduction program after CVFPP adoption. In order to complete the existing EIP projects and transition to the new program, additional staffing is required.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Ongoing Project Implementation		2016				
New Project Agreements		2012				
Project Closeout		2016				
Program Closeout		2016				
Lead	Kent Zenobia		kzenobia@water.ca.gov			
Website						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Feature Article in 4+ FloodSAFE Focus				
	<input checked="" type="checkbox"/> Brochure(s)	Featured in FloodSAFE materials				
	<input checked="" type="checkbox"/> Fact Sheet(s)	Fact Sheets for each EIP Project				
	<input checked="" type="checkbox"/> Multimedia(s)	Podcast for EIP PSP release in January 2011				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	None in 2011/12					
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> DOE (Real Estate, Engineering, Inspection) FRAMO Safe Drinking Water Office (financial review) 					
Support To Other IWM Topics						
Budget & Funding (in \$1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget (from PBE)						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Early Implementation Program

What is the Early Implementation Program (EIP)?

Projects moving forward BEFORE CVFPP

Funding Sources

- ◆ Prop 1E- State Share
- ◆ Prop 84- State Share
- ◆ Local Share

State Funding For:

- ◆ Rehabilitation, reconstruction, or replacement of facilities of the State Plan of Flood Control (SPFC).
- ◆ Improving or adding facilities to the SPFC to increase levels of flood protection for “urban” areas.
- ◆ These are critical or urgent projects of “no-regret” that are ready to proceed to construction.

Measures of Program Success

- ◆ 98 miles of levees improved or rehabilitated for flood protection
- ◆ Provides flood protection to urban areas in the Sacramento and San Joaquin River Basins.

PROJECTS	Approx. Length of Improvement (miles)	Total Project Cost \$(mil)	State Share \$(mil)
Sacramento Area Flood Control Agency, North Cross Canal (NCC) South Levee	5	73	49
Levee District – 1, Setback Levee at Star Bend Feather River	1	21	16
Reclamation District – 2103, Bear River North Levee Rehabilitation Project	5	18	11
Sacramento Area Flood Control Agency, Capital Outlay	15	276	193
Three Rivers Levee Improvement Authority, Feather River Levee Improvement Project	11	200	155
Three Rivers Levee Improvement Authority, Upper Yuba River Levee Improvement Project	4	68	47
Reclamation District – 17, 100-Year Seepage Area Project	9	76	62
West Sacramento Area Flood Control Agency, Capital Outlay	9	59	39
Sutter Butte Flood Control Agency, Capital Outlay (Design)	36	18	9
Knights Landing Drainage District, Levee Repair	3	7	6
San Joaquin Area Flood Control Agency– Smith Canal Closure Structure(Design)	N/A	5	2
TOTALS:	98	821	589

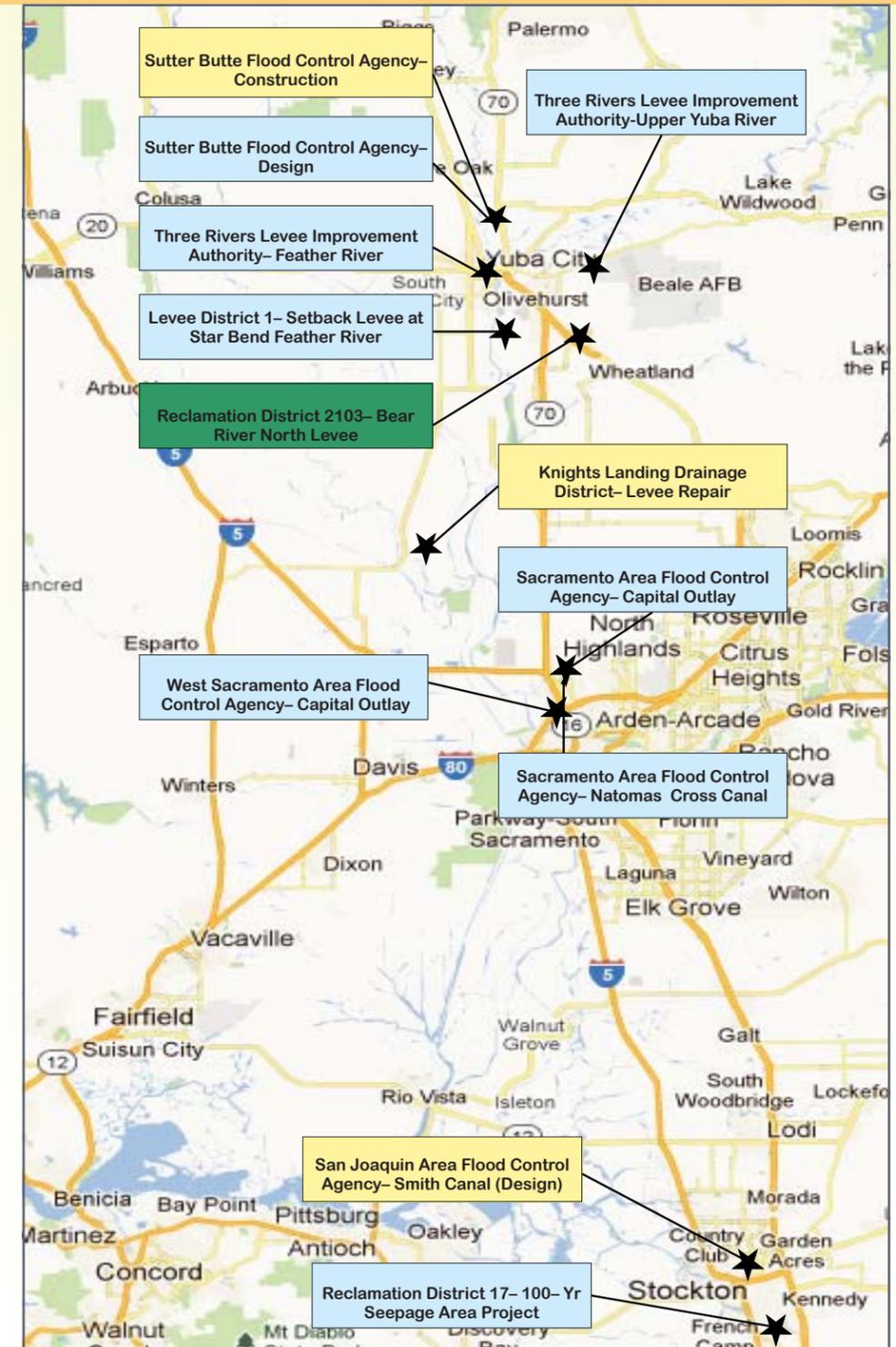


Top: LD 1- Setback Levee at Star Bend Feather River
Bottom: TRLIA- Feather River Levee Improvement

Map Legend

- Project in Progress
- Completed Project
- Pending Project

Program Manager: Kelly Fucciolo
Flood Projects Office
Division of Flood Management



Flood Control Subventions Program

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Protection Projects and Grants			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Provides financial assistance/cost shares with local agencies for non-State Plan of Flood Control (SPFC) facilities: <ul style="list-style-type: none"> • Authorized and constructed by US Army Corps of Engineers (USACE) • Authorized by State Legislature • State reimbursement for lands, easements, right-of-way and relocations • Currently 23 projects over \$400 million (using Prop 1E & 84) 			
Measurable Objectives	<ul style="list-style-type: none"> • Reduce backlog of reimbursement funding to locals to less than 18 months • Reduce State Controller's Office (SCO) audit reporting and payment processing time to less than 3 years • Close projects within 6 -12 months of final SCO audit reporting, upon completion of the project by USACE 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • USACE/federal agencies • Local agencies /flood control districts 		<ul style="list-style-type: none"> • Department of Fish and Game • State Water Resources Control Board 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> • Local agencies /flood control districts 		<ul style="list-style-type: none"> • Cities and communities 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	(i) On-going process improvements to enhance staff utilization; (ii) implementing project management tools/processes to plan, monitor and control finances; (iii) active coordination and improved communication with the locals to project funding needs; and (iv) close coordination with SCO team to help plan and reduce audit time			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable						
Program Guidelines Revision for Review (Jul-Sep 2012)		Q3 2012 (July-September)				
Lower Mission Creek Agreement (between State City of Santa Barbara)		Depending upon the USACE process				
Lead	Nahideh Madankar	nmadanka@water.ca.gov				
Website	http://www.water.ca.gov/floodmgmt/fpo/sgb/fcs/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Guidelines, Program /Project Binder & Project Engineering Reports				
	<input type="checkbox"/> Brochure(s)					
	<input type="checkbox"/> Fact Sheet(s)					
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities						
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> • Real Estate (DOE) • Office of Chief Counsel 					
Support To Other IWM Topics						
Budget & Funding (in \$1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Flood Control Subventions Program

*Division of Flood Management
Flood Projects Office
Program Manager: Nahideh Madankar*

The Flood Control Subventions Program (FCSP) provides financial assistance to non-federal sponsors cooperating in the construction of federally authorized flood control projects. California Water Code provides authorization for each flood control project and specifies the maximum State cost share (50-70%) for costs associated with the project lands, easements, relocations, right-of-way, and disposal sites (LERRDS).

FCSP Achievements:

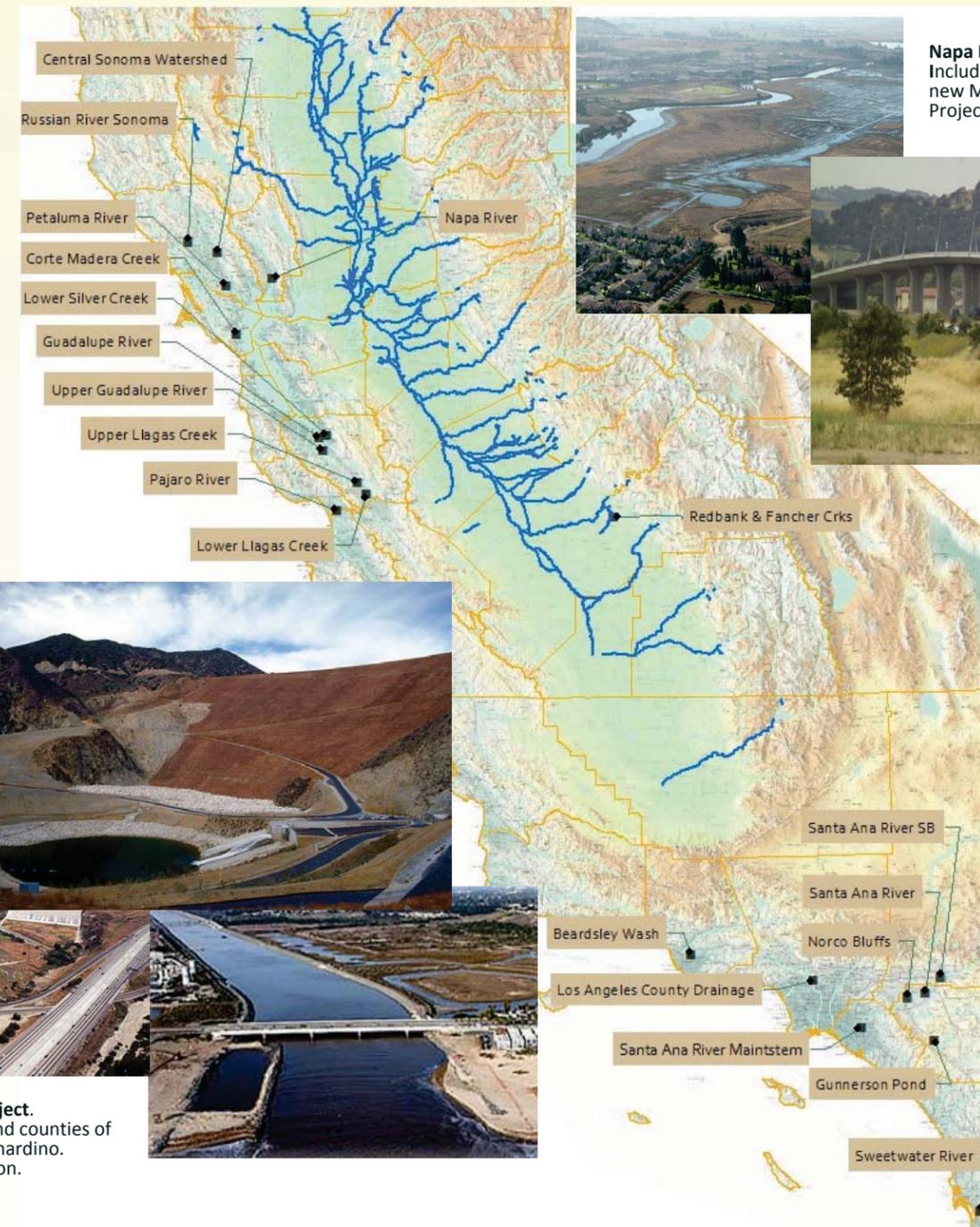
- Provides significant financial contribution to improve flood control systems by providing 100-year flood protection along approximately 110 miles of rivers and creeks, increasing safety to more than 3.4 million people in the urban, rural and farmland areas, in addition to enhancing and restoring the habitat, fishery and wildlife
- Involved in State funding of up to \$1.23 billion for 22 projects at up to \$3.2 billion worth in total construction costs; projects at various stages of construction through to completion
- Funds reimbursed to-date: \$470 million
- Projected funding needs (through FY15-16): \$ 450 million

Program Funding:

- **Past:** General Fund and Proposition 13
- **Current:** Propositions 84 and 1E

Legislative History:

- 1945 enacted State law: provided reimbursements to local flood control agencies for the rights-of-way and relocation costs associated with channel improvements and levee projects.
- 1973 Statue changed to include:
 - i. State-local cost sharing for flood control improvements for channel and levee projects
 - ii. State participation in the non-federal capital costs of recreation and wish and wildlife enhancement features
- Statue amendment in 2000 requires new flood control projects to meet prescribed requirements prior to State authorization and creates a variable State-local cost sharing based on multi-purpose objectives for the project.



Napa River/Napa Creek Project
Includes construction of the new Maxwell Bridge. Estimated Project Cost: \$440 million



Santa Ana River Mainstem Project.
Partnership between USACE and counties of Orange, Riverside, and San Bernardino. Estimated project cost : \$2 billion.

Local Levee Assistance Program (LLAP)

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Protection Projects and Project Grants			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To achieve flood risk reduction in local communities statewide through support of local projects that:</p> <ul style="list-style-type: none"> Address critical issues effecting structural and nonstructural flood protection Evaluate seepage, stability, and erosion of levees and flood control structures Analyze hydrology and hydraulics of creeks, rivers, and canals Study the feasibility and complete design of damaged or insufficient levees and flood control structures. Construct or repair levees and flood control structures. Promote communities to embrace objectives such as environmental stewardship, habitat restoration, open space, recreation, and connectivity between communities along flood corridors. 			
Measurable Objectives	<ul style="list-style-type: none"> Minimize imminent flood risk in local communities Achieve FEMA accreditation for levees which have not been accredited or have recently lost accreditation. Repair critically damaged levees before the next high water event. Support local agencies in environmental stewardship opportunities for flood control projects. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners	<ul style="list-style-type: none"> Local agencies statewide 		Regulatory Agencies / Partners <ul style="list-style-type: none"> FEMA Local agencies 	
Operating Agencies / Partners	<ul style="list-style-type: none"> Local agencies statewide (including cities, counties, and joint powers authorities) 		Land Use Agencies / Partners <ul style="list-style-type: none"> Cities, counties, and joint powers authorities statewide 	
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Consistently awards grant funds to worthy multi-benefit projects. This develops a relationship with local flood control agencies which encourages those agencies to utilize every opportunity to incorporate environmental and resource stewardship activities in flood control projects.			
<input checked="" type="checkbox"/> Improve Flood Management	Allocates sufficient resources to manage project contracts. Revised program guidelines allow more grant awards to go to multi-benefit projects in local communities and regional areas that increase flood protection, environmental stewardship, open space, and recreational enhancements.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New revenue generation and/or financial framework will be needed to continue this program beyond the latest Project Solicitation Proposal (PSP) and 2012 Grant Award Agreements.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
2011 Solicitation Draft List of Grant Awards		Q2 2012 (June 2012)				
2011 Solicitation Final List of Grant Awards		Q3 2012 (September 2012)				
Execute Grant Award Agreements		Q4 2012 (December 2012)				
Updated Program Guidelines		Prior to a program solicitation period. (Typically every 1-2 years)				
Lead	David Wright	dwright@water.ca.gov				
Website	http://www.water.ca.gov/floodmgmt/fpo/sgb/llap/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	2011 LLAP Guidelines and PSP				
	<input type="checkbox"/> Brochure(s)					
	<input type="checkbox"/> Fact Sheet(s)					
	<input checked="" type="checkbox"/> Multimedia(s)	LLAP Guidelines and PSP Workshops Webex Recordings				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Public comment periods for draft guidelines and draft grant awards					
Public Meetings / Open Houses	Public presentations and funding fairs					
Interactive Workshops	Public workshops					
Standing Workgroups						
Other	Local public workshops and presentations throughout the state, FloodSAFE Email database, websites, hard copy pamphlet mailings, and web-based video presentations.					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	Review of potential projects for grant award supported by staff from Flood Corridor Program, Office of Chief Counsel, and the Economic Analysis Section.					
Support To Other IWM Topics	<ul style="list-style-type: none"> Regional Flood Management Plans State-Led Feasibility Studies Policies, Procedures, and Guidelines Yuba Feather Flood Protection Program California Code of Regulations – Package Development, Processing, and Public Outreach Technical Support – Guidelines Development, GIS, etc. 					
Budget & Funding (in \$1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					



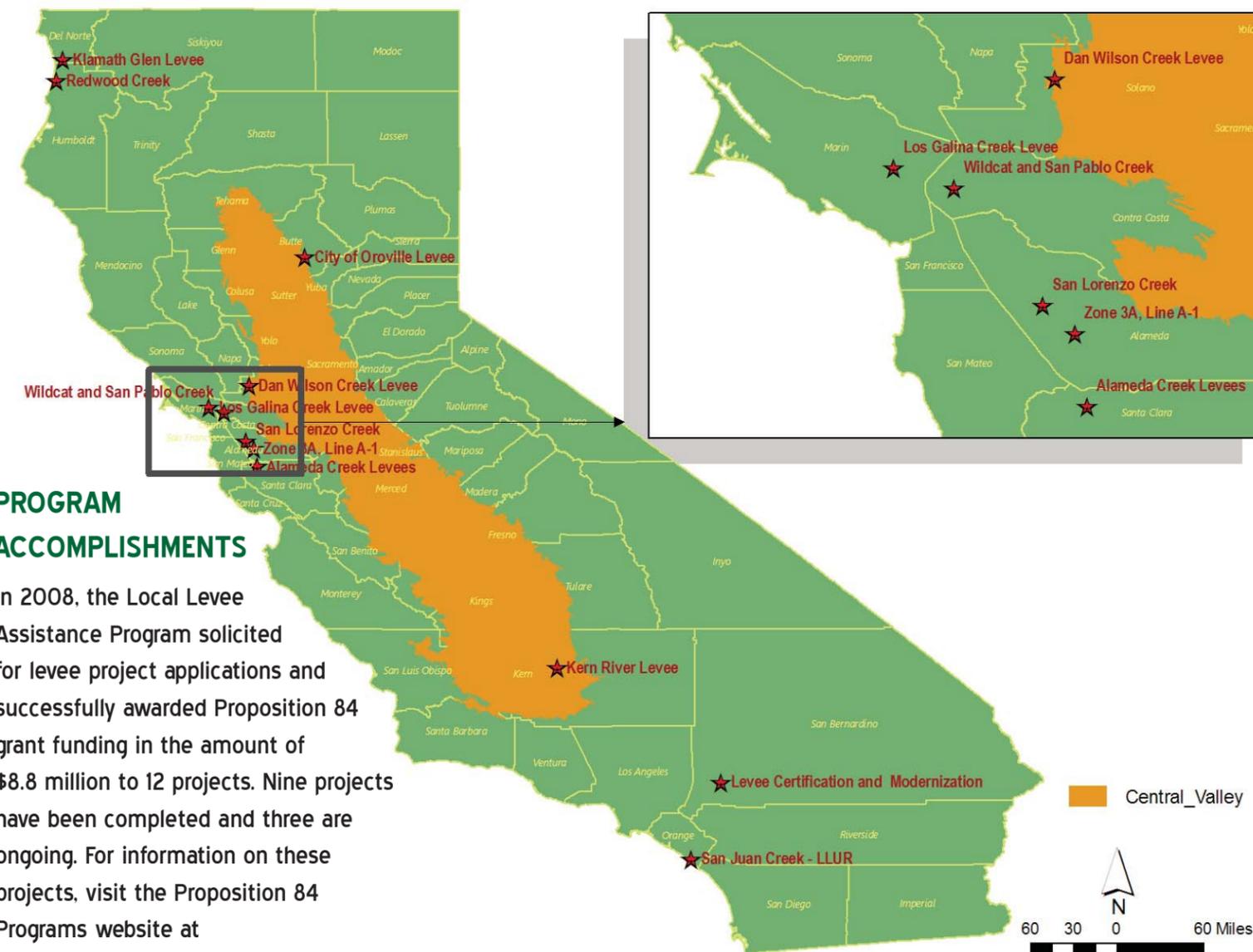
FloodSAFE

CALIFORNIA DEPARTMENT OF WATER RESOURCES

LOCAL LEVEE ASSISTANCE PROGRAM - STATEWIDE GRANTS

EVALUATION, REPAIR, AND IMPROVEMENT OF FLOOD CONTROL STRUCTURES

The Local Levee Assistance Program provides Proposition 84 grant funding statewide for the evaluation, repair, and improvement of flood control structures. Eligible projects include facilities that are not part of the State Plan of Flood Control and are not located within the Sacramento-San Joaquin Delta. Facilities located in the Central Valley are eligible if they are non-project levees and do not protect urban areas.



PROGRAM ACCOMPLISHMENTS

In 2008, the Local Levee Assistance Program solicited for levee project applications and successfully awarded Proposition 84 grant funding in the amount of \$8.8 million to 12 projects. Nine projects have been completed and three are ongoing. For information on these projects, visit the Proposition 84 Programs website at <http://www.bondaccountability.ca.gov>.

PROGRAM STRATEGIES

Local Levee Critical Repair (LLCR)

Funds design and repair of damaged levees, environmental documents, and reporting costs.

Local Levee Evaluation (LOLE)

Funds field surveys, geotechnical investigations, feasibility studies, up to 30% design, hydrology and hydraulic analysis, and lab testing.



FUTURE PROJECTS

The Local Levee Assistance Program has completed its second program solicitation process and is currently reviewing 50 applications for flood control projects statewide. The program has \$49.8 million available for levee evaluation and critical repair projects!

PROGRAM MANAGER: DAVID WRIGHT
FLOOD PROJECTS OFFICE
DIVISION OF FLOOD MANAGEMENT
WWW.WATER.CA.GOV/FLOODMGMT/FPO/SGB/LLAP

Flood Emergency Operations

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Statewide flood responsibility to protect public safety, property, environment and economy Flood emergency preparedness, response and recovery Coordination among LMAs, counties, State and federal agencies Real-time flood conditions, status, warning, and information dissemination 			
Measurable Objectives	<ul style="list-style-type: none"> Provide flood emergency technical assistance Coordinate Statewide flood emergency preparedness and response activities Improve Department flood emergency preparedness and response plans and procedures Enhance flood emergency operations information and communication technology Implement Flood Academy for flood emergency response training Expand flood emergency response rosters Flood system vulnerability assessment for residual risk management 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management		Train and deploy all available disaster service workers and manage flood fight materials in collaboration with flood emergency response partners to manage residual risk.		
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline					
Key External Milestone / Deliverable			Date (by Quarter / Year)		
Schedule & Implement Preseason Flood Coordination Meetings			Q3, annually		
Directory of Flood Officials			Q3, annually		
Flood Emergency Response Team Rosters			Q3, annually		
Preseason Vulnerability Assessment Report			Q4, annually		
WREM 63 Update-Flood Emergency Preparedness and Response Policy			Q2 2012		
Flood Emergency Operations Manual			Q2 2012		
Flood Academy Training Course Schedule			Q3 2012		
Flood Emergency Communication Plans			Q4 2012		
Lead	Bill Croyle	wcroyle@water.ca.gov			
Website	www.water.ca.gov/floodmgmt/hafoo/fob				
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Directory of Flood Officials, Flood Emergency Operations Manual, Incident Command System Field Operations Guide, Flood Fight Materials Management Plan, Flood Emergency Communication Plan, After Action Reports, Improvement Plans			
	<input checked="" type="checkbox"/> Brochure(s)	Flood Fight Methods, Engineer's Levee Threat Assessment, Levee Threat Monitoring Field Guide, Levee Threat Mitigation Process, Flood Safety Plan template			
	<input checked="" type="checkbox"/> Fact Sheet(s)	Informational Sheet: State – Federal Flood Operations Center			
	<input checked="" type="checkbox"/> Multimedia(s)	Flood Fight Training Video, FOCIS, FERIS, CDEC, Weather Briefings, River Recordings			
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities	Grant workshops (6) Spring 2011				
Public Meetings / Open Houses	Levee Threat Mitigation Workshops				
Interactive Workshops	Preseason flood coordination meetings				
Standing Workgroups	Delta Working Group FAXCT-2				
Other	Department and Multi-Agency Flood Emergency Exercises				
Internal Coordination (11/12 only)					
Support From Other IWM Topics				Support To Other IWM Topics	
<ul style="list-style-type: none"> Flood Projects Inspections & Vulnerability Flood O&M Flood O&M Environmental Support Hazard Mitigation USACE/CVFPB Projects Early Implementation Program Flood Control Subventions Program Local Levee Assistance Program Delta Levee Subvention & Special Projects FERIS/CDEC F-CO 				<ul style="list-style-type: none"> System Maintenance Floodplain Management Floodplain Evaluation & Delineation System Performance Assessments Central Valley Flood Protection Plan Snow Surveys Land & Water Use Delta Emergency Response Climate Change Environmental Stewardship 	
				<ul style="list-style-type: none"> Flood Emergency Response San Joaquin River Restoration Flood Risk Awareness Hazard Mitigation Local Levee Assistance Program Statewide Flood Management Planning Area Flood Planning Regional Flood Project Plans 	
Budget & Funding (in \$1,000s)			11/12	12/13	13/14
Forecasted Budget					
Expected Funding	<input checked="" type="checkbox"/> General Fund				
	<input type="checkbox"/> Bond (Prop 13)				
	<input type="checkbox"/> Bond (Prop 50)				
	<input checked="" type="checkbox"/> Bond (Prop 1E)				
	<input checked="" type="checkbox"/> Bond (Prop 84)				
	<input type="checkbox"/> Fees				
	<input type="checkbox"/> Reimbursable				
	<input type="checkbox"/> In-Kind Support				
<input type="checkbox"/> Other					
TOTAL FUNDING					

Flood Emergency Operations

Bill Croyle – Flood Operations Branch – Hydrology and Flood Operations Office – Division of Flood Management



Introduction

Wet or dry, the Flood Operations Branch is responsible for operating the Joint State-Federal Flood Operations Center in Sacramento and the Eureka Flood Center. These flood emergency operation centers are active throughout the year coordinating with various federal, state and local agencies, preparing flood fight staff and resources, testing tools, training, monitoring real-time conditions and disseminating data and information about flood threats. Year-round, these centers respond to floods and other types of emergencies statewide. The Flood Operations Center is available 24/7/365 at

916-574-2619

Emergency Response

The Department of Water Resources (Department) is the lead State agency for responding to flood emergencies as set forth in the California Government Code, the California Public Contract Code, and the California Water Code. All emergencies begin at the local level. The Flood Operations Center leads and coordinates flood emergency response activities statewide and provides assistance such as:

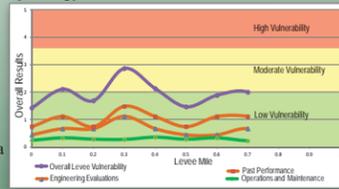
- Technical Assistance
- Flood Fight Specialists
- Environmental Scientists
- Geotechnical Specialists
- Incident Command Teams
- Materials
- Equipment
- Other Resources



Keep an Eye on the Ball

Monitoring the flood system throughout the year is just as important as monitoring the weather and hydrology. Timely and accurate assessment of the system leads to a better understanding of system vulnerabilities. Flood System Analysis provides the information and methodology that allows the Flood Operations Center to make informed decisions and focus on sites that need extra attention during high water. Other branches and programs provide vital information about how the system will react to intense weather and hydrology. This information includes:

- Engineering data
- Evaluation data
- Past Performance
- Operations data
- Maintenance data
- Utility Crossing data
- Encroachment data
- Repair Projects Status



DISASTER SERVICE WORKER



FLOOD NEEDS YOU!

After an Event

Improvement Plans are produced to document what we have done, what we are doing and what we are going to do with respect to flood management. Incorporating lessons learned and addressing concerns and recommendations ensures that the Department will remain prepared when disaster strikes.

- Bulletin 69-California High Water
- After Action Reports
- Implementation Plan



Resource Management

Placing appropriate quantities of materials and personnel in strategic locations is a very important aspect of emergency preparedness. Monitoring shelf life of resources, replacing materials in kind, and keeping detailed inventories throughout the year enables the Flood Operations Center to meet the demands of emergency response operations. Resources crucial to incident response include:

- People
- Supplies
- Equipment
- Materials
- Facilities
- Mutual Aid



DWR has over 1.6 million sand bags

Training

All Department staff are required to have the appropriate training to take on the role of a Disaster Service Worker for the State of California. The Flood Operations Center relies on Department staff who are trained in:

- Standardized Emergency Management System (SEMS)
- National Incident Management System (NIMS)
- Flood Fight Methods

The Flood Operations Center keeps everyone trained and involved through:

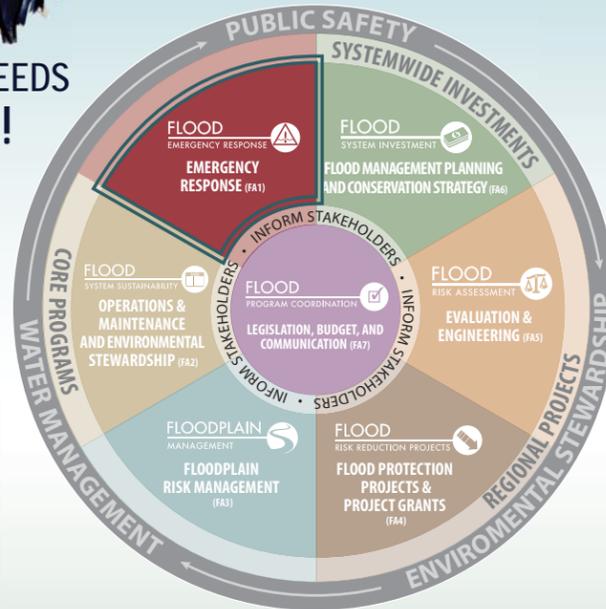
- Flood Academy
- Rosters
- Exercises



**BE AWARE
BE INVOLVED**

800-952-5530

Emergency Response Responsibility Statewide

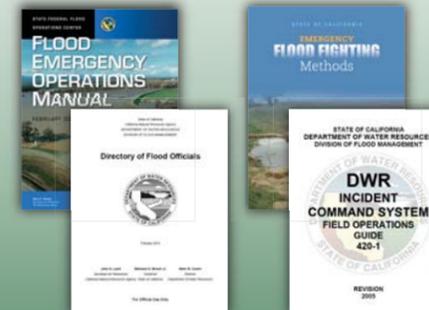


What is SEMS/NIMS and why is it important?

The Standardized Emergency Management System (SEMS) standardizes response to emergencies involving multiple jurisdictions or multiple agencies to improve coordination between the State and local emergency responders. SEMS is flexible and adaptable to the needs of all emergency responders in California. The Department has implemented SEMS at the Flood Operations Center, in its Incident Command Teams, and in all other DWR Emergency Response Teams. SEMS works within the National Incident Management System (NIMS) to coordinate emergency response on a national level.

Tools

Manuals, reports, booklets, and guides are developed and distributed to emergency responders during training and active flood operations.



Coordination

The Department of Water Resources is not alone during a flood emergency. The Flood Operations Center depends on emergency response partners. Coordinating with local agencies, counties, state agencies, and federal agencies to gather, analyze, and disseminate the flood operations center information ensures response efforts are closely coordinated before, during, and after events. Effective two-way communication is crucial and this is accomplished in part through Pre-Season Flood Coordination Meetings, river recordings, high water notification calls, weather briefings, emergency action plans, operational briefings and other collaboration.



Enhanced Communications



On-site satellite Emergency Communications Command Trailers support connectivity to the Flood Operations Center for resource requests and coordination of ongoing flood fight activities. It is important to reliably get the right information to the right people at the right time. The Flood Operations Center utilizes many methods to enhance emergency communications including:

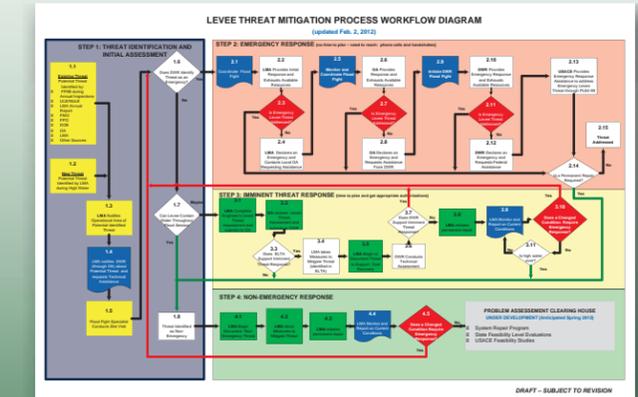
- Flash Reports & Flood ER Executive Updates
- Radio Interoperability Protocol
- Back-up Communication Systems
- Web Applications
- News/Media



Flood Operation Center Information System

Improved Processes

- Ensure timely effective response
- Clarify the roles and responsibilities of the Flood Operations Center
- Establish responsibilities at local, county, and state levels
- Establish common terminology and criteria for response
- Identifies requirements for requesting assistance



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



Flood Project Integrity and Inspection

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Provide better flood protection and response to emergencies by evaluating and documenting the condition of levees within the State Plan of Flood Control in order to better protect public health, life and property, including: <ul style="list-style-type: none"> State inspection of levees Reporting on assessment of levees by Local Maintaining Agencies (LMAs) Inventory existing Levee Utility Crossings, both permitted and not Study techniques to remotely monitor levees 			
Measurable Objectives	<ul style="list-style-type: none"> Document flood control system status and deficiencies Respond effectively to flood emergencies Establish and maintain trusting relationships with LMAs Provide technical support and recommendations to the Central Valley Flood Protection Board (CVFPB) on site-specific levee integrity issues, maintenance area formation, and both permitted and unauthorized encroachments 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> US Army Corps of Engineers (USACE) 5 Central Valley Flood Control Agencies Dept. of Fish and Game 		<ul style="list-style-type: none"> CVFPB Dept. of Fish and Game CALTRANS US Fish and Wildlife Service NOAA Fisheries 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> 100s of Central Valley Levee Maintaining Agencies National Weather Service (NWS) 		<ul style="list-style-type: none"> Cities, counties and communities in the Central Valley Private land owners State lands Federal lands 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Improve levee inspection criteria and programs, develop policies and procedures for encroachments and vegetation on levees			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Improving levee log databases and reporting, improve the high water staking procedures and outreach, improve system documentation			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
First: Annual Levee Inspection Report			Q4 Annually				
Second: Annual LMA Reporting Document			Q4 Annually				
Third: Levee Instrumentation Pilot Study			Q4 2013				
Fourth: Levee Erosion Monitoring Pilot Study			Q4 2012				
Fifth: Align Erosion Survey Methodology with USACE			Q4 2012				
Lead	Don Rasmussen		donr@water.ca.gov				
Website	http://water.ca.gov/flood/mgt/hafoo/fpiib , http://cdec.water.ca.gov/fsir.html , http://cdec.water.ca.gov/lma.html ,						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	2011 Inspection Report of the CVS-FFPS, Local Maintaining Agency Annual Report (LMAAR)					
	<input checked="" type="checkbox"/> Brochure(s)	High Water Staking Program					
	<input checked="" type="checkbox"/> Fact Sheet(s)	LMA Reporting Fact sheet, LMA Program Newsletter					
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	LMA Reporting						
Public Meetings / Open Houses	LMA Workshops, LMA Inspection working group						
Interactive Workshops	LMA Workshops,						
Standing Workgroups	USACE, DWR, CVFPB Coordination Meetings						
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> FERIS/ CDEC Bond Accountability System Performance Assessments USACE Coordinated Projects 						
Support To Other IWM Topics	<ul style="list-style-type: none"> Flood Emergency Response Flood Coordinated Operations System Maintenance System Performance Assessments Central Valley Flood Protection Plan Delta Emergency Response USACE Coordinated Projects 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
	TOTAL FUNDING						

Flood Project Integrity and Inspection

Don Rasmussen, Flood Project Integrity and Inspection Branch, Hydrology & Flood Operations Office, Division of Flood Management

Introduction

The Flood Project Integrity and Inspection Branch (FPIIB) provides for better flood protection and response to emergencies by evaluating and documenting the condition of levees and other facilities within the State Plan of Flood Control in order to better protect public health, life and property. Programs include State Inspection of Levees, Reporting on assessment of levees by Local Maintaining Agencies (LMA's), Inventorying existing Levee Utility Crossings and Studying techniques to remotely monitor levees.

Inspection of the Central Valley Flood Protection System

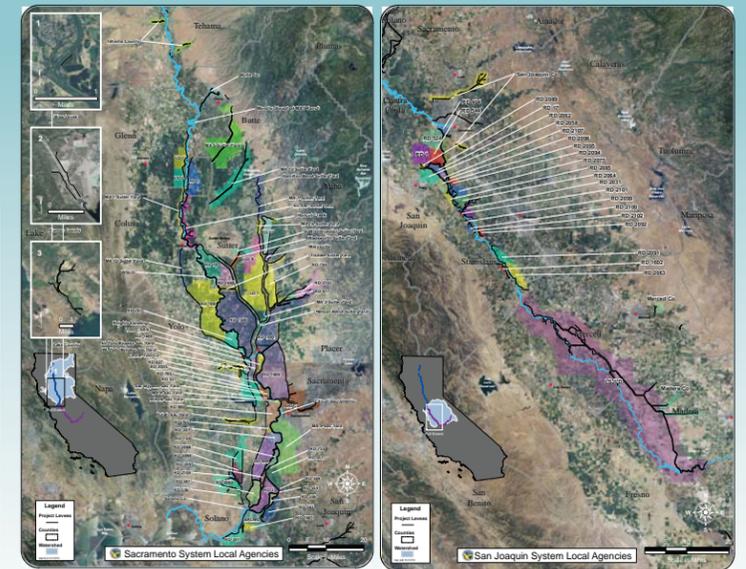
The Flood Project Inspection Section (FPIS) inspects the maintenance of the State-federal flood protection system by Local Maintaining Agencies (LMAs) semi-annually on behalf of the Central Valley Flood Protection Board (Board). The Inspection Program includes inspection of 1600 miles of project levees, 26 channels and creeks, and numerous structures. Each year, a report is generated presenting the inspection results of the levees, channels, and structures (<http://cdec.water.ca.gov/fsir.html>). DWR continues to work with the LMAs, the Board, and the Army Corps of Engineers for successful implementation of the program. An annual supplemental waterside erosion survey of the San Joaquin River Flood Control system is conducted to assist in the documentation and monitoring of erosion sites.

The image displays several screenshots from the California Data Exchange Center (CDEC) website. On the left, there are navigation menus for 'MOST POPULAR LINKS' and 'RELATED LINKS'. The main content area shows a 'Levee Inspection Report By Mile - Fall 2011' for the American River Flood Control District. This report includes a table with columns for 'Unit No.', 'Start Mile', 'End Mile', 'Inspection Date', and 'Inspection Status'. Below the table, there are photographs of levee structures and a detailed technical drawing of a levee cross-section with various measurements and labels.

LMA Reporting

Local Maintaining Agencies (LMAs) are required to report to the Department specific information related to the 1,600 miles of project levees in the State-federal flood protection system. This information is collected, compiled, evaluated, and reported in the Electronic Reporting Web Application (<http://cdec.water.ca.gov/lma.html>) and is summarized in an Annual Report to the Central Valley Flood Protection Board (CVFPB).

This block shows the cover of the 'Local Maintaining Agency Annual Report' for 2011, which features a photograph of a large reservoir. Next to it is a screenshot of the 'FloodSAFE CALIFORNIA Electronic Reporting Web Application' interface, showing a user-friendly web portal with various data entry fields and a map of the state of California.



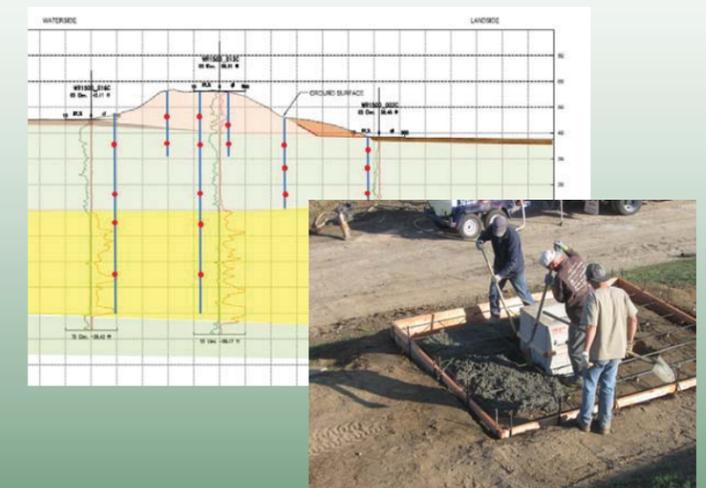
Utility Crossing Inventory Program

This program documents and catalogues all utilities crossing the Project levees; verifies the location and condition of utilities; and assesses the condition of the utility crossings on an ongoing basis.



Projects and Studies

The Levee Instrumentation Pilot Project has installed a network of sealed, vibrating-wire piezometers at a site along the left bank of the Sacramento River to measure changes in subsurface water pressure during high-water events. Success with information gathering at this site will help determine if more sites will be constructed along the levee system.



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY

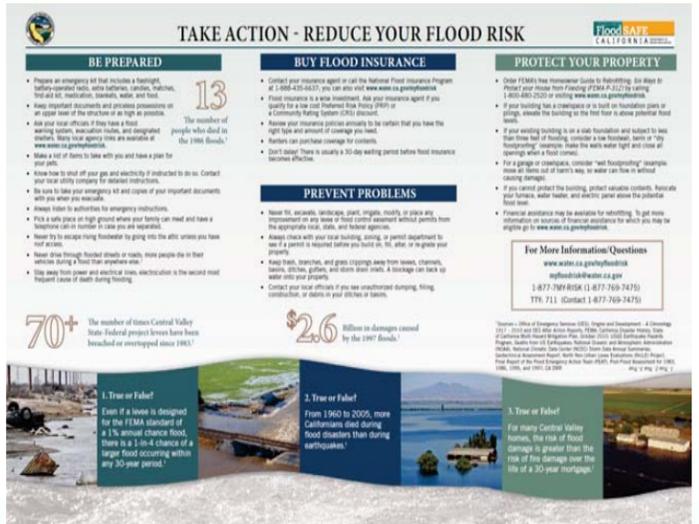
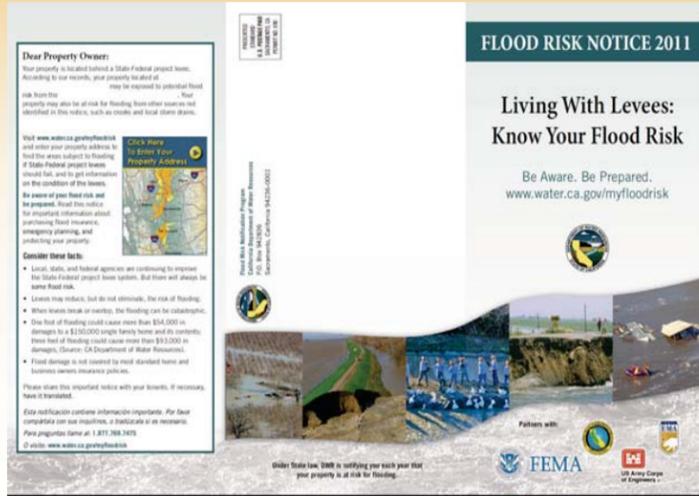


Flood Risk Awareness

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Floodplain Risk Management			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To develop data sources and tools to better understand potential flood hazards and risk associated with the State Plan of Flood Control (SPFC) and other levees and active floodplains, including:</p> <ul style="list-style-type: none"> Flood Risk Notification (FRN): Send Notice of Flood Risk to nearly 300,000 property owners in the Levee Flood Protection Zone of the SPFC. Best Available Map (BAM): Collect and compile best available 100-, 200-, 500-year floodplain maps for the State of California using FEMA, USACE, DWR, and regional and local studies/datasets; and make them digitally available to the public. California Levee Database (CLD): develop and maintain a statewide central repository for the levee and stream technical data for use by agencies and the public at large for flood risk assessment and emergency response. 			
Measurable Objectives	<ul style="list-style-type: none"> FRN accurately identifies parcels and owners to be notified and minimize postal returned notices Ensure BAM maps are appropriately updated and studies/datasets are incorporated. Populate and update attributes of levee systems in the CLD and ensure proper QA/QC. Track number of CLD data sharing requests and BAM map website hits. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USACE FEMA CalEMA 		<ul style="list-style-type: none"> FEMA 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> CVFPB Regional flood agencies Local maintenance agencies 		<ul style="list-style-type: none"> Cities and communities Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Increase flood risk awareness by effectively communicating that risk to individual property owners, the public, and local, state, and federal agencies			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline																																																																													
Key External Milestone / Deliverable	Date (Q /Yr)																																																																												
Develop the 2012 Flood Risk Notice and Update LFPZ maps	Q1 2012																																																																												
Obtain parcel info for 17 counties in LFPZ and analyze parcel data with GIS to identify the property owners	Q2 2012																																																																												
Update FRN website and LFPZ maps web viewer	Q3 2012																																																																												
Print and mail out the annual written notices along with 1% of the Readership Survey to property owners	Q3 2012																																																																												
Response to the public inquires and develop the 2013 FRN	Q4 2012																																																																												
Release California Levee Database (Version 3.0: R1)	Q1 2013																																																																												
Release California Levee Database (Version 3.0: R2)	Q1 2013																																																																												
Update BAM floodplain datasets and the web viewer	Q4 2012																																																																												
Lead	Ricardo Pineda	rpineda@water.ca.gov																																																																											
Website	FRN- www.water.ca.gov/myfloodrisk BAM- http://gis.bam.water.ca.gov/bam CLD - http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/levee_database.cfm																																																																												
Key Program Information Materials	<input type="checkbox"/> Report(s)																																																																												
	<input checked="" type="checkbox"/> Brochure(s)	Draft Floodplain Risk Management (January 2012) Annual Written Flood Risk Notice																																																																											
	<input checked="" type="checkbox"/> Fact Sheet(s)	Flood Risk Notification,																																																																											
	<input checked="" type="checkbox"/> Multimedia(s)	Video: Central Valley Flood Risk																																																																											
External Communication & Engagement Approach (11/12 only)																																																																													
Public Comment Opportunities	FRN - Ongoing meetings with local agencies as needed basis.																																																																												
Public Meetings / Open Houses																																																																													
Interactive Workshops																																																																													
Standing Workgroups	FRN – DWR, USACE, and FEMA team meeting, regularly.																																																																												
Other																																																																													
Internal Coordination (11/12 only)																																																																													
Support From Other IWM Topics	<ul style="list-style-type: none"> Floodplain Evaluation & Delineation National Flood Insurance Program (NFIP) & Community Rating System (CRS) 																																																																												
Support To Other IWM Topics	<ul style="list-style-type: none"> Floodplain Evaluation & Delineation Flood O&M 																																																																												
Budget & Funding (in \$1,000s)																																																																													
Forecasted Budget																																																																													
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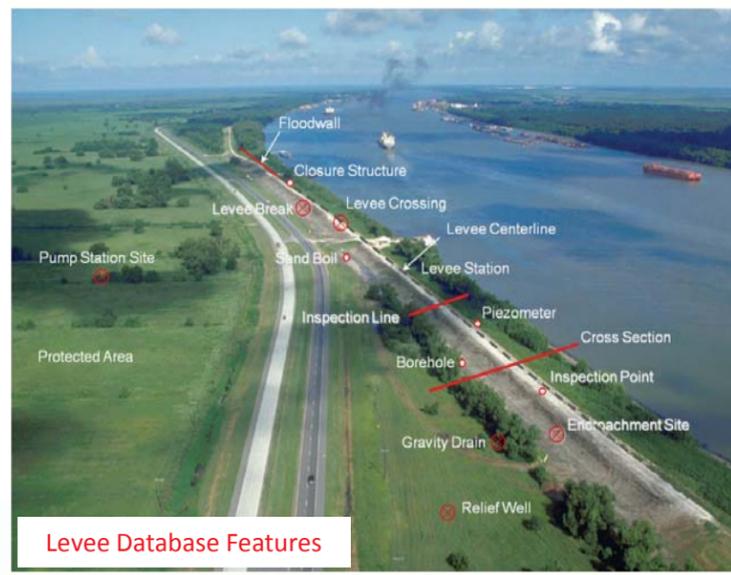
Flood Risk Notification



Flood Risk Notification (FRN):

- Under State law, a flood risk notice must be sent each year to properties located behind any State-Federal levee and within a Levee Flood Protection Zone (LFPZ).
- The LFPZ maps are used to determine which property owners receive the notice.
- FRN aims to reduce flood risk and damages by increasing awareness and encouraging individual actions to minimize potential losses.
- Each year, about 273,000 Central Valley property owners (350,000 parcels in 17 counties) receive the notice.
- For more information visit the FRN website at www.water.ca.gov/myfloodrisk.

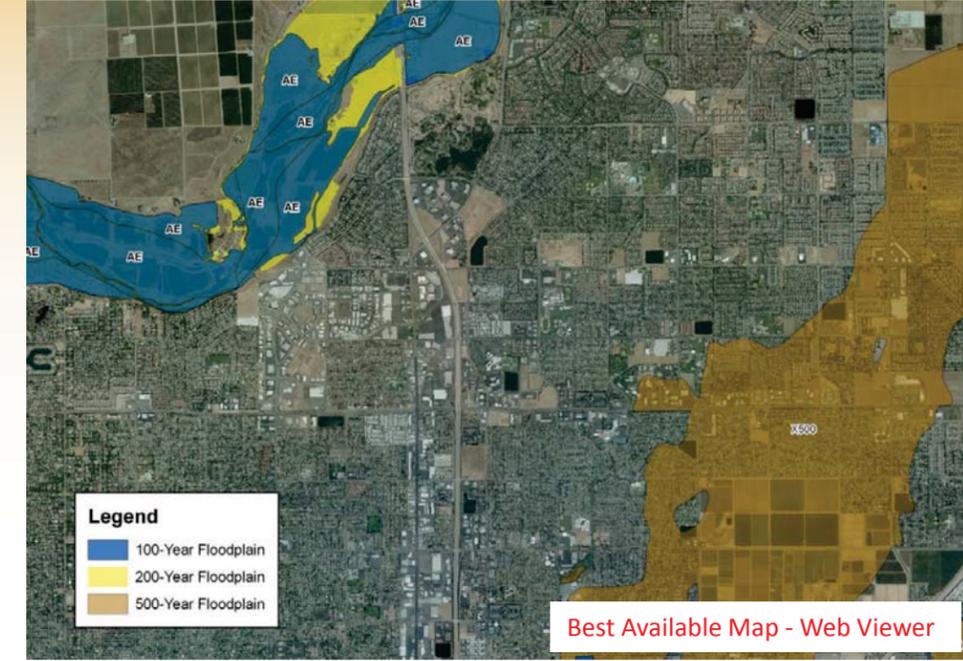
California Levee Database



California Levee Database (CLD):

- CLD is a statewide central repository for levee and flood control structures that is used for flood risk assessments and emergency response.
- CLD includes more than 11,400 miles of levees within the State (1,600 miles of SPFC levees and 9,800 miles of other levees).
- Percent complete of primary CLD attributes: SPFC levees 92%, Federal Non-SPFC levees 85%, and local levees 71%.
- Access to CLD database is maintained through DWR's California Data Exchange Center (CDEC).

Best Available Maps



Best Available Maps (BAM):

- Pursuant to Senate Bill 5, DWR developed the Best Available Maps (BAM) displaying 100- and 200-year floodplains for areas located within the Sacramento-San Joaquin Valley watershed.
- DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.
- BAM web viewer displays 100-, 200-, and 500-year floodplains. The web viewer allows users to view a particular area and identify their potential flood hazards.
- BAM identifies potential flood risks and provide information for land use decision making.
- For more information, visit website at <http://gis.bam.water.ca.gov>.

Flood Risk Awareness

Program Manager: Ricardo Pineda
 Division of Flood Management
 Floodplain Risk Management Branch

Flood Hazard Mitigation

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Floodplain Risk Management			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<p>Through local, state and federal partnerships, assist California communities with implementing sound floodplain management activities and programs. Specifically,</p> <ul style="list-style-type: none"> Obtain and leverage federal grants for state-related flood planning activities and provide technical assistance to small and rural communities applying for federal grants. Propose amending existing CA Building Code Standards for educational, multi-family residential, medical, and commercial facilities to better address flood risks – e.g., public safety and flood damage Provide planning and technical mapping data to urban communities within the Central Valley, so they can comply with the urban level of protection requirements in Senate Bill 5, and integrate flood risk into local land use planning. Incorporate flood risk planning into the California Water Plan and Integrated Regional Water Management Plans. 			
Measurable Objectives	<ul style="list-style-type: none"> Identify the projects and plans that meet federal grant requirements. Apply for federal grants for qualifying projects and plans. Develop draft and final building codes for appropriate occupancy groups and submit code package during code update cycle. Develop best management practices for construction of structures located in floodplains to minimize losses. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> FEMA/HUD Cal EMA USACE CA Cities and Counties Private land owners 		<ul style="list-style-type: none"> FEMA HUD Cal EMA CA Building Standards Commission 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> CA Cities and Counties Private land owners 		<ul style="list-style-type: none"> C.V. Cities & Communities Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Reduce flood risks by implementing non-structural solutions and informed land use planning.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing policies, institutions, revenue generation, etc related to flood risk coordination protocols, financial frameworks, adaptive flood management			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline									
Key External Milestone / Deliverable					Date (by Quarter / Year)				
Provide Assistance to Interested Communities to Apply For the Available Federal Hazard Mitigation Grants					Q3 2012				
Initiate and Select the Eligible Projects to Apply for the Available Federal Hazard Mitigation Grants					Q2 2012				
Submit the Notice of Interest and the Application Packet for the Selected Projects					Q3 2012				
Execute the Awarded Projects					Q2 2013				
Complete ULOP Criteria Public Draft Document					Q3 2012				
Initiate development of BMP for construction in floodplains					Q4 2012				
Lead	Ricardo Pineda				rpineda@water.ca.gov				
Website									
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>Handbook for Local Communities, ULOP Criteria public draft document</i>							
	<input checked="" type="checkbox"/> Brochure(s)	<i>Draft Floodplain Management Functional Area 3</i>							
	<input checked="" type="checkbox"/> Fact Sheet(s)	<i>Building Code Update, Handbook for local Communities</i>							
	Multimedia(s)								
External Communication & Engagement Approach (11/12 only)									
Public Comment Opportunities	ULOP Criteria Public Draft Document								
Public Meetings / Open Houses									
Interactive Workshops	ULOP Working Group meeting								
Standing Workgroups									
Other	Meet with communities as needed to coordinate grant applications								
Internal Coordination (11/12 only)									
Support From Other IWM Topics	<ul style="list-style-type: none"> Floodplain Evaluation & Delineation Flood Risk Notification CVFPP NFIP 								
Support To Other IWM Topics	<ul style="list-style-type: none"> USACE Coordinated Projects Statewide Flood Management Planning IRWM Planning and Implementation Grants CVFPP California Water Plan 								
Budget & Funding (in \$1,000s)									
					11/12	12/13	13/14	14/15	15/16
Forecasted Budget									
Expected Funding	<input type="checkbox"/> General Fund								
	<input type="checkbox"/> Bond (Prop 13)								
	<input type="checkbox"/> Bond (Prop 50)								
	<input type="checkbox"/> Bond (Prop 1E)								
	<input checked="" type="checkbox"/> Bond (Prop 84)								
	<input type="checkbox"/> Fees								
	<input type="checkbox"/> Reimbursable								
	<input type="checkbox"/> In-Kind Support								
	<input type="checkbox"/> Other								
	TOTAL FUNDING								

Integrated Flood Planning Technical Support

We assist communities in integrating flood risk into local land use planning, including flood mapping assistance. We also integrate flood management into the California Water Plan and into the Integrated Regional Water Management plans.

We accomplish our mission through these efforts:



Assists California communities to incorporate flood risk management into land use planning.



Assist rural and legacy communities to become more flood resilient through NFIP reform, Building Code amendments, etc.

FLOOD HAZARD MITIGATION

“Any action taken to reduce or eliminate the long-term risk to human life and property from flooding”

We assist California communities implement sound floodplain management projects and programs through a partnership of local, state, and federally sponsored projects through the efforts described here.

Studies show that Flood Hazard Mitigation projects are cost effective, technically feasible, and meet all environmental regulatory requirements.

Program Manager: Ricardo Pineda, Division of Flood Management, Floodplain Risk Management Branch

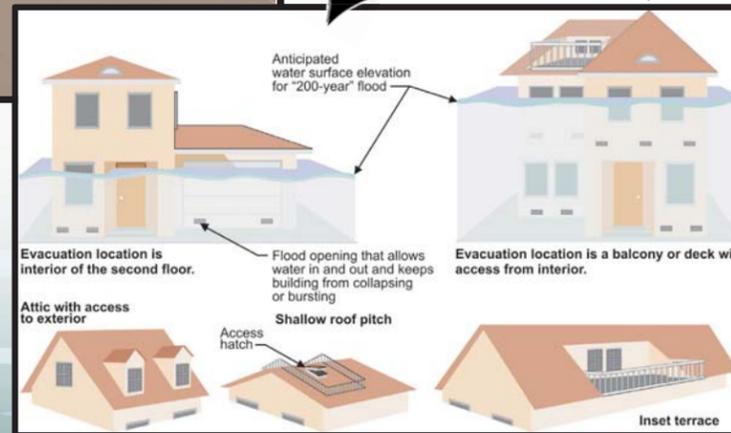
California Building Standards Code Updates

Pursuant to SB-5, we develop Code amendments to reduce flood impacts to life and structures. Proposed Code updates will be for educational, single and multi-family residential, medical, and commercial buildings within the 200-year floodplain. Code updates must be approved by the California Building Standards Commission to be effective.



Without the Building Code regulations promulgated by DWR (examples shown below), occupants would likely have no flood evacuation location and clear path to it

In 2010, developed the Building Standards Commission-approved voluntary code amendments for single family residential structures



Federal Hazard Mitigation Grants

We leverage federal grants, including FEMA and HUD programs.

We assist small and rural communities and state agencies to plan and carry out hazard mitigation projects through successful application and project implementation of grants.



HAZUS estimates social and economic impacts from floods

- Federal grant programs we obtain, implement and manage include:
- FEMA grants for home elevations in Placer and Sutter Counties
 - FEMA grant to analyze flood hazards, using HAZUS software, in Santa Barbara County
 - FEMA grant to analyze debris flow in Southern California debris basins



Building elevation



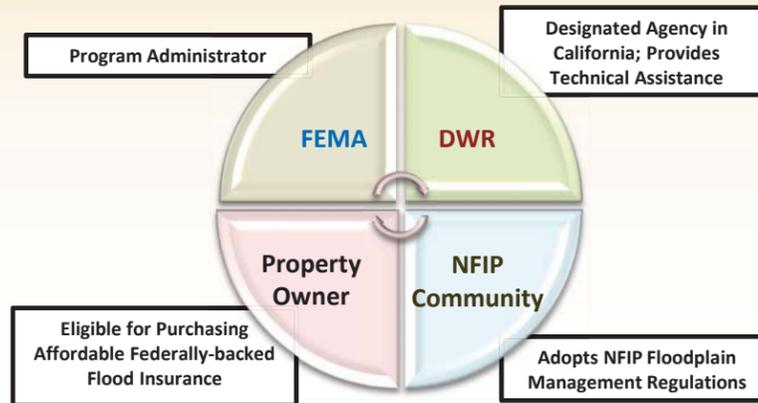
National Flood Insurance Program (NFIP) and Community Rating System (CRS)

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Floodplain Risk Management			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>DWR is the designated agency for overseeing FEMA's NFIP program in the State of California. This consists of the NFIP Community Assistance Program (CAP) and Community Rating System Program (CRS). The scope of DWR's activities include:</p> <ul style="list-style-type: none"> Conduct Community Assistance Visits with NFIP-participating communities to ensure that each community meets or exceeds the minimum NFIP requirements. Conduct training to community officials and insurance agents/lenders to improve understanding of the NFIP regulations Support CRS program; participating communities account for 65% of NFIP policies statewide with premium savings estimated at \$15 million per year. Update the NFIP Five-Year State Floodplain Management strategic plan Respond to requests and provide technical assistance to community officials and general public on a wide range of issues related to flood risk management Provide post-disaster support to FEMA and CalEMA, including deployment to other states Update the floodplain management model ordinance to reflect California's adoption of the International Building Codes (IBC, IRC). 			
Measurable Objectives	<ul style="list-style-type: none"> Complete all work products required with the annual CAP contract matrices Increase the number of communities participating in the CRS program Increase the flood insurance premium dollar savings by CRS communities Amount of technical support delivered to all levels of government and the public Collaborate with FEMA to track progress in delivering the deliverables required as part of the annual NFIP CAP contract. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> DWR: Division of Flood Management, Division of Integrated Regional Water Management NFIP Cities and Counties 		<ul style="list-style-type: none"> CA Cities and Counties USACE Flood Risk Management Program 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> DWR: Division of Flood Management, Division of Integrated Regional Water Management NFIP Cities and Counties 		<ul style="list-style-type: none"> NFIP Cities and Counties 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Through NFIP, floodplain management may increase ground water recharge opportunities			
<input checked="" type="checkbox"/> Improve Water Quality	Through NFIP, floodplain management may improve water quality			
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Encourage communities to adopt higher floodplain management standards to mitigate the flood risk and protect lives and properties.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
CAP Contract Starts			2Q CA FY 11 (Federal FY beginning October 1, 2011)				
CAP Contract Ends			1Q CA FY 12 (Federal FY ending September 30, 2012)				
Lead							
Ricardo Pineda		Email: rpineda@water.ca.gov					
Website							
NFIP: http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fas/nfip/ CRS: http://www.water.ca.gov/nfipcrs							
Key Program Information Materials							
<input type="checkbox"/> Report(s)							
<input checked="" type="checkbox"/> Brochure(s)		National Flood Insurance Program Community Rating System					
<input checked="" type="checkbox"/> Fact Sheet(s)		National Flood Insurance Program Community Rating System					
<input checked="" type="checkbox"/> Multimedia(s)		Quick Guide (Hard Copy, CD, and available online)					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
31 Community Assistance Visit meetings , 26 Technical Workshops, CRS Users Group meetings							
Internal Coordination (11/12 only)							
Support From Other IWM Topics		<ul style="list-style-type: none"> Floodplain Evaluation & Delineation Flood Risk Awareness Hazard Mitigation 					
Support To Other IWM Topics		<ul style="list-style-type: none"> Floodplain Evaluation & Delineation Flood Risk Awareness Hazard Mitigation 					
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding							
<input checked="" type="checkbox"/> General Fund							
<input type="checkbox"/> Bond (Prop 13)							
<input type="checkbox"/> Bond (Prop 50)							
<input checked="" type="checkbox"/> Bond (Prop 1E)							
<input type="checkbox"/> Bond (Prop 84)							
<input type="checkbox"/> Fees							
<input type="checkbox"/> Reimbursable							
<input type="checkbox"/> In-Kind Support							
<input checked="" type="checkbox"/> Other (Federal Fund for CAP only)							
TOTAL FUNDING							

National Flood Insurance Program (NFIP)

Through the NFIP, FEMA provides affordable federally-backed flood insurance to property owners in participating communities. The Department of Water Resources (DWR) is the designated agency for overseeing the NFIP in California.



Community Rating System (CRS)

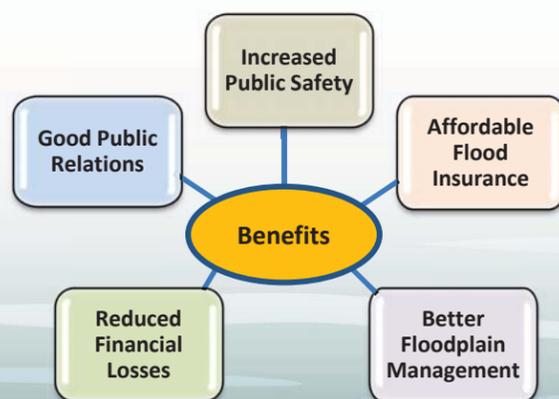
For NFIP communities, FEMA offers the CRS voluntary incentive program that provides up to a 45% discount to property owners on their flood insurance premiums. Following CRS' preventative multi-objective floodplain management approach, CRS participants take actions that exceed the minimum NFIP requirements to reduce flood losses and mitigation costs.



Program Manager: Ricardo Pineda
Division of Flood Management
Floodplain Risk Management Branch

<http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fas/nfip/>

NFIP and CRS Benefits



Quick Facts (As of 11/30/2011)

- 523 NFIP Communities: 97% of Total CA Communities
- 83 CRS Communities: 16% of NFIP Communities
- Current Number of Flood Insurance Policies: 265,833
- Total Value of Insured Property: \$68 Billion
- Flood Insurance Cost Savings through CRS: \$15 Million/Year
- A Preferred Risk Flood Insurance Policy with \$250,000 coverage costs homeowners \$365 per year

DWR Floodplain Risk Management Branch Conducts Statewide NFIP/CRS Outreach with Regional Support

Dam Safety

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	To provide for the safe operation, construction and maintenance of dams statewide <ul style="list-style-type: none"> Maintenance and construction Inspections Re-evaluation of dams Design reviews of plans and specifications Emergency response Special investigations 			
Measurable Objectives	<ul style="list-style-type: none"> Complete inspections for all dams annually Review plans and specifications for all dams under application Respond to all emergencies affecting dams and provide technical assistance Complete technical studies annually 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Dam owners including water districts, utility companies, flood control districts, farmers and others 		<ul style="list-style-type: none"> FERC Environmental agencies for CEQA compliance 		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality	Safe dams provide a consistent and reliable source of water			
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Some dams are critical to providing flood control benefits			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

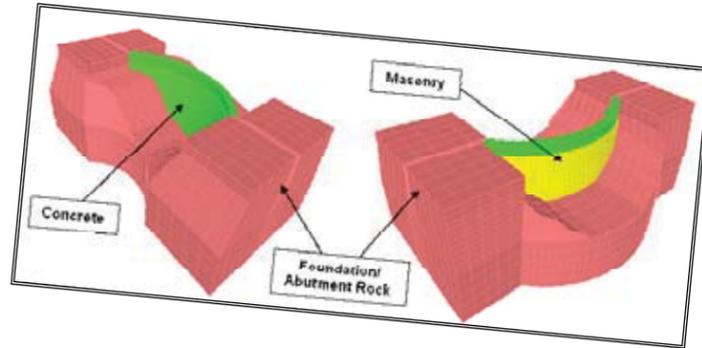
Milestone & Timeline																																																																					
Key External Milestone / Deliverable	Date (by Quarter / Year)																																																																				
Complete 100% of all maintenance inspections	4Q 2012																																																																				
Review and approve 35 applications	4Q 2012																																																																				
Begin new program on seismic stability of dams statewide	4Q 012																																																																				
Lead	David Gutierrez	daveg@water.ca.gov																																																																			
Website	http://www.water.ca.gov/damsafety																																																																				
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Division of Safety of Dams Annual Report																																																																			
	<input checked="" type="checkbox"/> Brochure(s)	California's Dam Safety Program																																																																			
	<input type="checkbox"/> Fact Sheet(s)																																																																				
	<input type="checkbox"/> Multimedia(s)																																																																				
External Communication & Engagement Approach (11/12 only)																																																																					
Public Comment Opportunities	During all CEQA documentation procedures for new projects																																																																				
Public Meetings / Open Houses	Occasional public meetings for specific dams throughout the state																																																																				
Interactive Workshops																																																																					
Standing Workgroups																																																																					
Other																																																																					
Internal Coordination (11/12 only)																																																																					
Support From Other IWM Topics	<ul style="list-style-type: none"> Grants made available to dam owners Development of CEQA documentation for dam projects for lead agency 																																																																				
Support To Other IWM Topics	<ul style="list-style-type: none"> Provide specific information regarding dams to other agencies 																																																																				
Budget & Funding (in \$1,000s)																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;"></th> <th>11/12</th> <th>12/13</th> <th>13/14</th> <th>14/15</th> <th>15/16</th> </tr> </thead> <tbody> <tr> <td>Forecasted Budget</td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td rowspan="10">Expected Funding</td> <td><input type="checkbox"/> General Fund</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 13)</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 50)</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 1E)</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 84)</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Fees</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Reimbursable</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> In-Kind Support</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>TOTAL FUNDING</td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>							11/12	12/13	13/14	14/15	15/16	Forecasted Budget						Expected Funding	<input type="checkbox"/> General Fund					<input type="checkbox"/> Bond (Prop 13)					<input type="checkbox"/> Bond (Prop 50)					<input type="checkbox"/> Bond (Prop 1E)					<input type="checkbox"/> Bond (Prop 84)					<input type="checkbox"/> Fees					<input type="checkbox"/> Reimbursable					<input type="checkbox"/> In-Kind Support					<input type="checkbox"/> Other					TOTAL FUNDING					
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DAM SAFETY

David Gutierrez, Chief
Division of Safety of Dams



Design Reviews



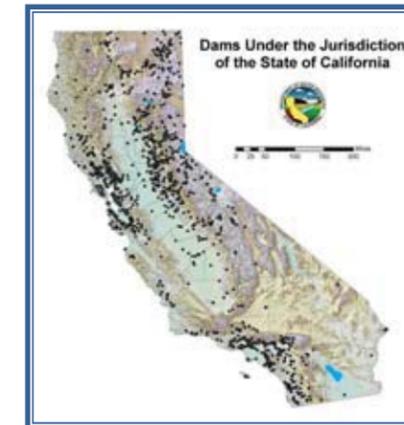
- DSOD reviews plans and specifications to ensure dams are designed safely
- DSOD completes independent evaluations.

Construction Inspections

- DSOD inspects all construction work associated with the, repair, alteration or enlargement of existing dams and the construction of new dams.

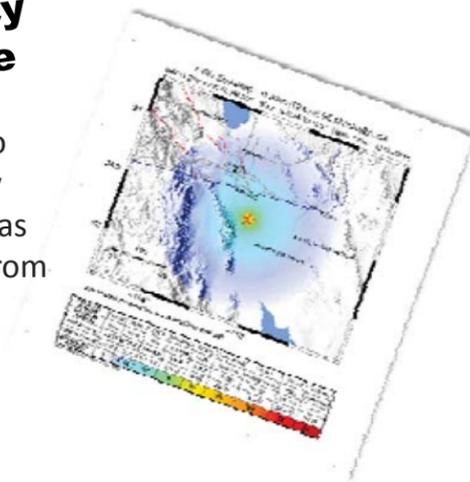


St. Francis Dam, 1928 Failure

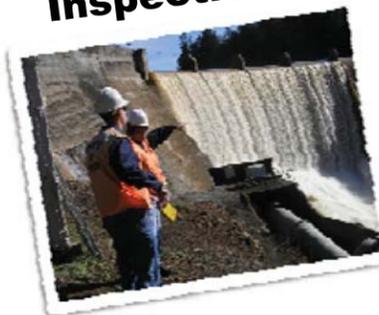


Emergency Response

- DSOD responds to various dam safety emergencies such as damage to dams from earthquakes and floods.



Maintenance Inspections



- DSOD inspects all 1250 dams at least once per year to ensure safe operation and maintenance

Re-Evaluations

- DSOD periodically re-evaluates dams to ensure dams will withstand normal and extreme loads such as those expected from earthquakes and large floods.



Regional Coordination

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Regional Coordination/ IWM Communication Team			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Ensure consistent messaging/processing for IWM programs and projects Ensure transmission of relevant DWR program information to the public in a timely and responsive manner Ensure information exchange among programs and projects, both DWR and non-DWR, in a region is occurring; and provide a feedback method to reduce redundant meetings and data requests 			
Measurable Objectives	<ul style="list-style-type: none"> Meet with program managers no less than twice per year to define/refine/evaluate messaging, and program requirements/processes and brief on other related programs to ensure message consistency Provide semi-annual regional program update presentations/summaries to DWR program and project managers Develop internal and external RC outreach materials to inform programs and partners of RC functions and to set expectations Meet semi-annually with USACE, Reclamation and other federal, State and local agencies, DACs, Tribal entities and relevant NGOs to coordinate regional activities Develop a streamlined method for program managers and external partners to submit information, or requests to the Regional Coordination team 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners	<ul style="list-style-type: none"> This program includes meetings and coordination with all relevant agencies 		Regulatory Agencies / Partners	
Operating Agencies / Partners	<ul style="list-style-type: none"> This program includes meetings and coordination with all relevant agencies 		<ul style="list-style-type: none"> This program includes meetings and coordination with all relevant agencies 	
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	This program fulfills the need for cross-cutting, integrated communication between programs and DWR and its external partners and stakeholders			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Draft PMP	Q1 2012					
Draft Tools Report	Q2 2012					
Draft Regional Coordinator Handbook	Q2 2012					
Final PMP	Q2 2012					
Final Regional Coordinator Handbook	Q2 2012					
Lead	Scott Woodland	woodland@water.ca.gov				
Website	https://regionalcoordination.water.ca.gov					
Key Program Information Materials	<input type="checkbox"/> Report(s)					
	<input type="checkbox"/> Brochure(s)					
	<input checked="" type="checkbox"/> Fact Sheet(s)	In development				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	RC program will improve paths for public comment on all IWM programs					
Public Meetings / Open Houses	RC staff will attend and participate in public meetings, but the program will not host public meetings					
Interactive Workshops	RC staff will attend relevant and participate in workshops, but the program will not host workshops					
Standing Workgroups	RC staff will attend and participates in workgroups, but the program will not host workgroups					
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Provide information on messaging and activities Adopt system-wide tools that RC program may develop 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Assessment of actions needed to achieve consistent messaging Improved understanding of other agencies Improved tools for stakeholder contacts, calendaring and data sharing 					
Budget & Funding (in 1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Regional Coordination Program

Scott Woodland, Headquarters

Division of Integrated Regional Water Management

Scott Woodland: woodland@water.ca.gov | Regional Coordinators: DWR-RC@water.ca.gov



Current

Coordination has been difficult, and messaging is inconsistent, making outreach inefficient and reducing its effectiveness.



Vision

DWR provides consistent messages to its water management partners and stakeholders in an efficient and timely manner to foster collaboration.

Activities

- Lead meetings with program managers
- Lead meetings with federal, tribal, state and local agencies
- Develop reporting on message consistency and regional activities
- Develop Regional Coordination outreach materials
- Improve procedures for responses to requests
- Implement performance monitoring

Benefits

Department

- Objective monitoring of consistency and effectiveness of outreach
- Reduced cost of outreach
- Savings and value from project/program synergies and avoided redundancies

Programs

- Improved ability to reach stakeholders during public outreach
- Improved understanding of other DWR programs
- Consistent messaging to the public

Public and Other Agencies

- Identifiable point of contact
- More streamlined communication



REGIONAL PARTNERSHIP

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Grants Administration & Local Support			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To empower, enable, and support regional water management groups and local agency partners by providing:</p> <ul style="list-style-type: none"> • facilitation support services to foster collaboration; • technical support services to inform water management decisions; and • public education opportunities (e.g., conferences, seminars, printed literature, and multimedia) 			
Measurable Objectives	<ul style="list-style-type: none"> • Connect a minimum of five regional water management groups/local agency partners with needed facilitation support annually • Connect a minimum of five regional water management groups/local agency partners with needed technical support annually • Conduct statewide IRWM conference biannually • Conduct regional seminars on relevant IRWM topics (e.g., spanning boundaries, conflict resolution, etc.) at least biannually • Support timely production of printed literature and broadly accessible video/interactive content to increase public awareness of IRWM and its value to California's economic stability, environmental stewardship, and public safety 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • Water Education Foundation • Center for Collaborative Policy, CSU Sacramento 				
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	<p>It is conceivable that by empowering, enabling, and supporting regional water management groups and local agency partners, Regional Partnership services will contribute to reduced water demand, improved operational efficiency and responsible transfers, increased water supply, improved water quality, resource stewardship, improved flood management, and improved administrative/institutional tools.</p>			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

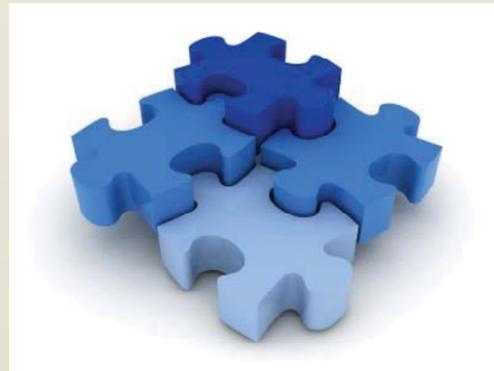
Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Regional Seminar – Spanning Boundaries/Conflict Resolution			Q3 2012				
Video – “What is IRWM?”			Q3 2012				
Video – “What has IRWM Accomplished in California?”			Q3 2012				
Video – “How Can I Participate in IRWM?”			Q3 2012				
Video – “Case Studies of Successful IRWM Projects”			Q4 2012				
Video – “What is the Future of IRWM in California?”			Q1 2013				
IRWM Conference 2013			Q2 2013				
Lead	Chris McCreedy		mccready@water.ca.gov				
Website	Under development						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Internal Guidelines for Management of Facilitation Support Services (Rev. 06/11); Internal Guidelines for Management of Facilitation Support Services (05/11)					
	<input type="checkbox"/> Brochure(s)						
	<input checked="" type="checkbox"/> Fact Sheet(s)	Facilitation Support Services – Information for Applicants (03/11)					
	<input checked="" type="checkbox"/> Multimedia(s)	Under development					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups	Facilitation Support Services Review Panel (monthly)						
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> • Regional Forums 						
Support To Other IWM Topics	<ul style="list-style-type: none"> • IRWM Financial Assistance Program 						
Budget & Funding (in 1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input checked="" type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
	TOTAL FUNDING						

REGIONAL PARTNERSHIP

◆ **EMPOWER** ◆ **ENABLE** ◆ **SUPPORT** ◆ **INFORM**

Regional partnership assistance benefits our partners' ability to implement locally-controlled and managed projects. We foster collaboration, help inform community water management decisions, and provide public education opportunities.

Facilitation Support Services



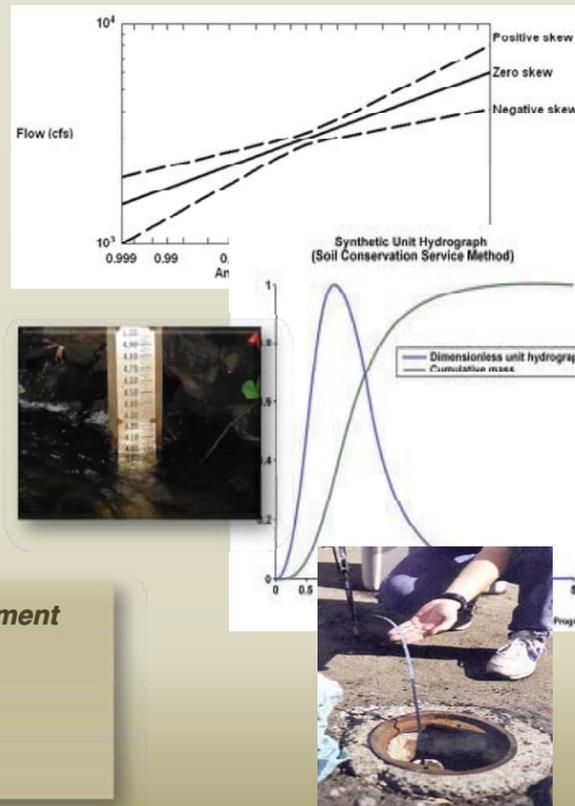
Professional facilitators are sometimes needed to help foster discussions among diverse local water management interests and jurisdictions for implementation of Integrated Regional Water Management (IRWM) Program goals. The scope of facilitation services available ranges from stakeholder identification, outreach, and assessment to stakeholder liaison and meeting support.

Division of Integrated Regional Water Management

- REGIONAL PLANNING BRANCH
- NORTHERN REGION OFFICE
- NORTH CENTRAL REGION OFFICE
- SOUTH CENTRAL REGION OFFICE
- SOUTHERN REGION OFFICE

Technical Support Services

Technical support services are available to help fulfill a broad spectrum of regional and local water management needs, such as economic analysis, environmental support services, design, modeling, and support for DWR's water management programs, and activities such as flood management planning.



Public Education



IRWM Conference

In 2011, DWR and the Water Education Foundation (WEF) co-sponsored a statewide conference engaging IRWM practitioners and stakeholders in discussions of such timely water management topics as: environmental sustainability, climate change, policy alignment, and funding uncertainty. We look forward to hosting the next conference in 2013!

Seminars

As a complement to the conferences, DWR plans to offer regional seminars on relevant IRWM topics to support regional water management groups and local agency partners in navigating today's resource management challenges.

Multimedia

DWR will produce a series of short videos to provide information about IRWM for the general public and other audiences. In addition, DWR will join with WEF and other partners to produce a *Layperson's Guide to IRWM*, in both interactive digital and more traditional formats.



Watermaster Services—Northern & Southern California

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Grants Administration and Local Assistance			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Implement various water rights, which include court ordered, appropriated, pre-1914, and riparian rights Work with water rights holders on incorporating environmental requirements NC – facilitate the delivery of surface water rights SC-navigate groundwater storage and extraction rights for conjunctive use SC-DWR wants storage rights, Watermaster is neutral 			
Measurable Objectives	<ul style="list-style-type: none"> Customer satisfaction Distribute water based on rights to allow the water to be put to beneficial usage and reduce the cost of legal cases dealing with water rights 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> DWR is Watermaster for Central Basin and West Coast Basin, along with river/creeks of Hat, Burney, NF Cottonwood, Cow, Oak Run, Digger, Butte, Indian, Napa, and upper Feather River 		<ul style="list-style-type: none"> Superior Courts: Counties of Los Angeles, Shasta, Tehama, Plumas, Sierra, Butte, Napa SWRCB DFG 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Water Replenishment District of Southern California 		<ul style="list-style-type: none"> Cities: Los Angeles, Long Beach, Downey, others Water Districts, Irr. Dists., Mutuals, citizens Industry & agriculture 		
Resource Management Strategies to Address Goal & Objectives—check all that apply				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Provides reliable & fair water distribution, prevents overdraft of critical groundwater supply & sea water intrusion			
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

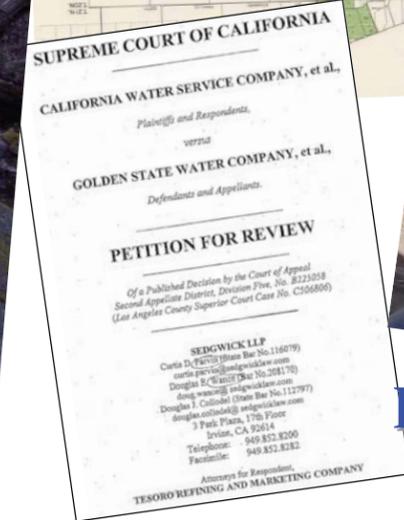
Milestone & Timeline								
Key External Milestone / Deliverable				Date (by Quarter / Year)				
Annual Watermaster Reports				Q3 each year				
CA Supreme Court Review of groundwater storage rights				TBD - 2013?				
DWR turned over Scott & Shasta Rivers to local control				Q1 2012				
Annual reporting of water use to SWRCB				Q2 each year				
Lead	Mark Stuart & Curtis Anderson		marks@water.ca.gov curtisa@water.ca.gov					
Website	http://www.water.ca.gov/watermaster/							
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Annual Watermaster reports, fall						
	<input type="checkbox"/> Brochure(s)							
	<input type="checkbox"/> Fact Sheet(s)							
	<input type="checkbox"/> Multimedia(s)							
External Communication & Engagement Approach (11/12 only)								
Public Comment Opportunities	Public meetings, watermasters,							
Public Meetings / Open Houses	Central Basin Water Association, West Basin Water Association							
Interactive Workshops								
Standing Workgroups	Watermaster districts							
Other	CA Supreme Court review of groundwater storage rights, County Superior Court amendments							
Internal Coordination (11/12 only)								
Support From Other IWM Topics	<ul style="list-style-type: none"> Water Quality and Quantity Surface Water Investigations 							
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Land and Water Use Date 							
Budget & Funding (in 1,000s)				11/12	12/13	13/14	14/15	15/16
Forecasted Budget (need)								
Expected Funding (have)	<input type="checkbox"/> General Fund							
	<input type="checkbox"/> Bond (Prop 13)							
	<input type="checkbox"/> Bond (Prop 50)							
	<input type="checkbox"/> Bond (Prop 1E)							
	<input type="checkbox"/> Bond (Prop 84)							
	<input checked="" type="checkbox"/> NC - Reimbursable							
	<input checked="" type="checkbox"/> SC - Reimbursable							
	<input type="checkbox"/> In-Kind Support							
	<input type="checkbox"/> Other							
TOTAL FUNDING								

Note: Motions to amend the judgment to allow groundwater storage rights are being reviewed by CA Supreme Court. The motion would also eliminate DWR as Watermaster in southern California.

Watermaster Services

Resource Stewardship

Courts determine water rights, and the Watermaster assists the Court in the administration and enforcement of the provisions of the judgments.



Northern California Streams
Bill Mendenhall—Northern Region Office, DIRWM

Los Angeles County Groundwater Basins
Mark Stuart—Southern Region Office, DIRWM

Water Use Efficiency Grants

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Grants Administration & Local Support			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Provide financial assistance in the form of grants to implement promising water use efficiency projects throughout the State, including: <ul style="list-style-type: none"> Urban and agricultural implementation projects that result in water savings Technical assistance, training, education, and public outreach Feasibility studies; research and development; and pilot projects 			
Measurable Objectives	<ul style="list-style-type: none"> Release of Proposal Solicitation and Application Guidelines Conduct proposal review and a competitive project selection process Administer awarded grants Help urban and agricultural communities cope with water shortages and drought conditions through the implementation of water use efficiency projects As well as water savings, water use efficiency projects provide water quality improvements, energy savings, and environmental benefits. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Local water agencies and irrigation districts Academic and research institutions Agricultural and Urban Water Management Councils US Bureau of Reclamation 		<ul style="list-style-type: none"> State Water Resources Control Board California Department of Public Health 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Municipal Water Agencies Irrigation Districts Other local agencies involved in water management 		<ul style="list-style-type: none"> Local agencies 		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Further water conservation and water use efficiency programs and projects			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Achieved water savings provide improved operational efficiencies and transfers			
<input type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality	Some water use efficiency measures provide water quality improvements			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Financing water use efficiency reduces the need for additional water supplies, reduces diversions, saves energy, and helps water supply reliability			
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Grants for water use efficiency projects help improve water management practices and provide local agencies with tools to implement water conservation efforts			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable	Date (by Quarter / Year)						
Release Draft Proposal Solicitation (PSP) for Proposition 50 Agricultural Water Use Efficiency Grants (~\$15 million)	Q2 2012						
Conduct Public Workshops and Solicit Public Comments	Q2 2012						
Release Final Prop 50 Agricultural Water Use Efficiency PSP	Q3 2012						
Review and Rank Grant Proposals	Q4 2012						
Issue Draft Funding Recommendation	Q1 2013						
Conduct Public workshops	Q1 2013						
Issue Final Funding Awards	Q1 2013						
Develop Grant Agreements	Q2 2012						
Administer Awarded Grants	Q3 2013 -						
Lead	Manucher Alemi		malemi@water.ca.gov				
Website	http://www.water.ca.gov/wateruseefficiency/finance/						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Water Use Efficiency Proposal Solicitation Packages					
	<input checked="" type="checkbox"/> Brochure(s)	Several brochures and flyers					
	<input checked="" type="checkbox"/> Fact Sheet(s)	Helped develop local agencies' outreach and training material					
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	Comment periods provided for Proposal Solicitation and Application Guidelines and for Funding awards.						
Public Meetings / Open Houses							
Interactive Workshops	Workshops conducted for Draft PSP, Final PSP, Draft Funding Awards, and Final Funding Awards						
Standing Workgroups	Independent Review Panel for application ranking, Agency Funding Team project awards and funding allocations						
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> Water Use Efficiency Land & Water Use Data Regional Partnerships 		<ul style="list-style-type: none"> Bond Management System Project Management Support 				
Support To Other IWM Topics	<ul style="list-style-type: none"> Water Use Efficiency California Water Plan Bond Accountability 						
Budget & Funding (in 1,000s)							
Forecasted Budget			11/12	12/13	13/14	14/15	15/16
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input checked="" type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input checked="" type="checkbox"/> Other						
	TOTAL FUNDING						

Financing Water Use Efficiency



February 2012

Statewide Integrated Water Management
Water Use and Efficiency Branch
Water Use Efficiency Grant Program

- Fethi Benjemaa 916.651.7025
- Jodi Evans 916.651.7026
- Olivia Willis 916.651.9663



Fund agricultural and urban water use efficiency projects throughout the State, including:

- Water Use Efficiency Implementation projects that result in water savings
- Water Use Efficiency Technical Assistance, Training, Education, and Public Outreach
- Water Use Efficiency Feasibility Studies, Research and Development, and Pilot Projects

Water Use Efficiency projects help agricultural and urban communities cope with water shortages and drought conditions, provide water savings, water quality improvements, energy savings, and environmental benefits.



City of Santa Monica Rain Harvesting
Units Installed to Date: 138
Grant Amount: \$70,000

Grant Source	Urban Grants		Agricultural Grants		All Grants	
	Funding (Million)	Number of Projects	Funding (Million)	Number of Projects	Funding (Million)	Total # of Projects
2008 Prop 50	\$17.2	53	\$15	Pending	\$32.20	53
2007 Prop 50	\$18.2	35	\$ 9.9	22	\$28.10	57
2005 Prop 50	\$16.9	46	\$11.7	28	\$28.60	74
2003 Prop 13	\$18.0	25	-	-	\$18.00	25
2002 Prop 13	\$8.5	21	\$0.7	8	\$9.20	29
2001 Prop 13	\$0.7	7	\$0.5	5	\$1.20	12
2001 SB 23	\$5.9	30	\$5.9	23	\$11.80	53
Total	\$85.4	217	\$47.1	86	\$132.50	303



Metropolitan WD of SoCal - High Efficiency Clothes Washer Rebates
Water Savings: 12,226 AF over 15 yrs
Grant Amount: \$1,660,000



Orland Regulating Reservoir
Water Savings: 2,380 to 4,420 AF
Grant Amount: \$2,490,895



City of Palmdale Demonstration Garden
Water Savings: 2.97 AF / yr
Grant Amount: \$201,097



West Basin MWD - CII Incentive Program
Water Savings: 1,580 AF over 10 yrs
Grant Amount: \$404,437



Lost Hills WD - Canal Lining
Water Savings: 3,450 AF over 10 yrs
Grant Amount: \$804,900



Water Saving Fixtures
Several Grants Awarded Statewide



Stevenson Water District - Lateral Pipelining Project
Water Savings: 952 to 2,926 AF per Irrigation Season
Grant Amount: \$896,000

IRWM Planning and Implementation Grants (IRWM Grant Programs)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System/Statewide		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Grants Administration & Local Support			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>The IRWM Grant Programs provide financial assistance in a manner that:</p> <ul style="list-style-type: none"> Results in optimal investment of state funding providing maximum benefit to the State's people and environment through improved local and regional water management Is transparent and provides for engagement by partner agencies, interest-based stakeholders, and the public on program development and implementation Is consistent with legal, legislative, and DWR policy requirements for each funding source <p>Active grant programs include: IRWM Planning Grants, IRWM Implementation Grants, Stormwater Flood Management (SWFM), and Local Groundwater Assistance.</p>			
Measurable Objectives	<p>For Proposition 84 IRWM funding</p> <ul style="list-style-type: none"> Sustainable water management – developing estimates for water supply yield, water savings, improved water quality, etc. All IRWM Plans updated to 2010 standards More collaborative water management Improved integration of projects IRWM Plans consider Climate Change vulnerability Project selection considers mitigation of greenhouse gas emissions <p>For Proposition 1E SWFM funding</p> <ul style="list-style-type: none"> Reduce flood damage and provide other benefits SWFM actions are consistent with applicable IRWM plans 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> 48 Regional Water Management Groups (RWMGs) supporting individual IRWM regions which includes a variety of local and regional water/flood management agencies, land use agencies, state and federal agencies, non-governmental organizations, and tribal entities 		<ul style="list-style-type: none"> IRWM is not a regulatory program. However, SWRCB and RWQCB support grant program efforts. Other regulatory agencies also participate in the IRWM planning process with the RWMGs. 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> None identified 		<ul style="list-style-type: none"> None identified 		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	<p>The IRWM grant programs are a component action of the Practice Resource Stewardship RMS. When developing an IRWM Plan, RWMGs must consider the 27 RMS contained in the 2009 California Water Plan. The IRWM plan must identify which RMS were incorporated into the IRWM Plan. The SWFM grant funding supports the Improve Flood Management RMS and funds projects that provide multiple benefits such as those provided by other RMS.</p>			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Issue Final Round 2 Guidelines and IRWM Implementation and SWFM PSPs		Q3 2012				
Round 2 IRWM Planning Grant Awards (\$9M)		Q3 2012				
LGA Grant Program Awards (\$4.7M)		Q4 2012				
Round 2 SWFM Grant Awards (\$91M)		Q2 2013				
Round 2 IRWM Implementation Grant Awards (\$131M)		Q1 2014				
Issue Final Round 3 Guidelines and IRWM Implementation PSP		Q3 2014				
Round 3 IRWM Implementation Grant Awards (\$472.5M)		Q4 2015				
Lead	Tracie Billington	tracieb@water.ca.gov				
Websites	http://www.water.ca.gov/irwm/ http://www.water.ca.gov/irwm/integregio_stormwaterflood.cfm http://www.water.ca.gov/lgagrnt/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<p>Round 1 Guidelines and Proposal Solicitation Packages (PSPs):</p> <ul style="list-style-type: none"> Program Guidelines IRWM Planning Grant PSP IRWM Implementation Grant PSP SWFM PSP <p>Round 2:</p> <ul style="list-style-type: none"> IRWM Planning Grant Proposal Solicitation PSP <p>Round 2 Guidelines and Implementation and SWFM PSPs are under development</p> <ul style="list-style-type: none"> Draft 2012 LGA Guidelines and PSP 				
	<input checked="" type="checkbox"/> Brochure(s)	<ul style="list-style-type: none"> IRWM Brochure <p>Summary report on the Prop 50 IRWM program is being developed.</p> <ul style="list-style-type: none"> Proposition 13 Groundwater Program Summary Report Local Groundwater Assistance Grant Program Summary Report 				
External Communication & Engagement Approach (2012 only)						
Public Comment Opportunities	Draft LGA Guidelines and PSP; Draft Round 2 Guidelines and Implementation and SWFM PSPs; Draft Planning Grant Awards; and Draft LGA Grant Awards.					
Public Meetings / Open Houses	Applicant Workshops for IRWM Planning, IRWM Implementation, SWFM, and LGA.					
Other	Participate in a wide variety of external communication efforts to outreach to IRWM regions and potential grant recipients regarding the various grant programs, including coordination and communication with the Roundtable of (IRWM) Regions.					
Internal Coordination (2012 only)						
Support From Other IWM Topics	<p>Assistance for grant review efforts and grant management:</p> <ul style="list-style-type: none"> IRWM Coordination (Region Offices) Technical expertise and support of grant review process: IWM Economic Assessments Water Use Efficiency Flood Risk Awareness Central Valley Flood Protection Plan Dam Policy Guidance & Permitting Bond Management System Bond Accountability 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Statewide Flood Management Planning California Water Plan IRWM Strategic Plan Regional Partnerships Regional Coordination Climate Change Sustainability Indicators Water Use Efficiency Grants and other financial assistance programs Bond Management System Bond Accountability 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Expected Funding	Bond (Prop 50) State Operations (SO)					
	Bond (Prop 1E) – SO					
	Bond (Prop 84) – SO					
	TOTAL FUNDING – SO					
	Bond (Prop 1E) SWFM– Local Assistance (LA)					
	Bond (Prop 84) IRWM – LA					
	TOTAL FUNDING – LA					
	TOTAL FUNDING					

Integrated Regional Water Management Grant Programs

Providing Financial Assistance to Meet the Long Term Water Needs of the State
Including Safe Drinking Water and Protection of Water Quality and the Environment

Proposition 50 IRWM Grant Program

Proposition 50 authorized \$500 million for IRWM activities. The Proposition 50 IRWM grant program was jointly administered by DWR and the State Water Resources Control Board (SWRCB).

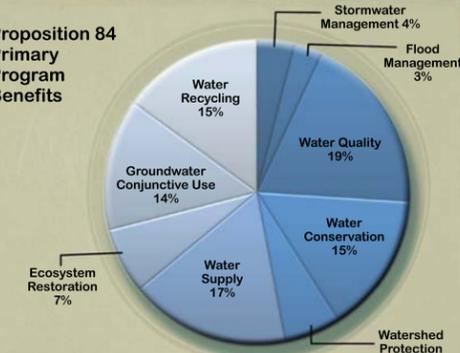
- ✓ IRWM and Integrated Coastal Watershed Management (ICWM) Planning Grant Program – DWR awarded \$12.6 million to 28 IRWM and ICWM planning projects and the SWRCB provided \$2.1 million for 5 ICWM plans.
- ✓ IRWM Implementation Grants – DWR and SWRCB awarded \$365.1 million to 19 IRWM Regions to support over 200 individual projects with a total project costs in excess of \$2.5 billion.

Local Groundwater Assistance Grant Program

The Local Groundwater Assistance Act of 2000 was enacted to provide grants to local public agencies to conduct groundwater studies or carry out groundwater monitoring and management activities.

- ✓ Between 2000 and 2008 conducted 6 solicitations and awarded 179 grants, of which over 140 have been completed.
- ✓ In 2012, will solicit grant proposal and anticipate awarding \$4.7 million to approximately 20 agencies.
- ✓ Final scheduled round of LGA grant funding.

Proposition 84 Primary Program Benefits

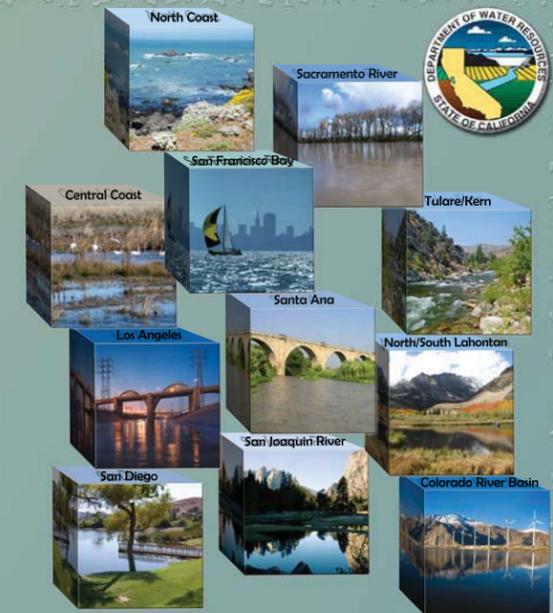


Proposition 13 Groundwater Grant & Loan Program

Proposition 13 provided \$200 million for the Groundwater Storage Construction, Feasibility Studies, and Pilot Project grants and \$30 million for Groundwater Recharge Construction loans and Feasibility Study grants. Between 2001 and 2004, awarded grant and loan funding to 62 projects with total project costs in excess of \$1 billion. By 2013, all projects will be constructed and in operation.

Resources

- <http://www.water.ca.gov/irwm>
- http://www.water.ca.gov/irwm/integregio_fundingarea.cfm
- <http://www.floodsafe.water.ca.gov>



The Natural Resources Agency
Department of Water Resources
Division of Integrated Regional Water Management



Proposition 84 IRWM Grant Program

Proposition 84 authorized \$1 billion for IRWM activities, of which \$900 million was allocated to 11 Funding Areas and \$100 million for Interregional actions.

- ✓ IRWM Planning Grant Program – A total \$30 million made available to foster the development, improvement, and enhancement of IRWM Plans. In 2011, awarded \$21 million to 30 IRWM regions for planning actions totaling \$32 million. The 2nd and final round of planning grants is being conducted in 2012 and will award \$9 million.
- ✓ IRWM Implementation Grant Program – A total of \$808.5 million made available to fund projects and programs that are consistent with and implement IRWM plans and provide multiple benefits. In 2011, awarded \$205 million to 25 IRWM regions to support implementation of over 200 projects with total project costs of over \$980 million.



Proposition 1E SWFM Grant Program

Proposition 1E authorized \$300 million for grants for projects that manage stormwater runoff to reduce flood damage and provide other benefits and are consistent with an IRWM plan. In 2011, awarded \$178 million to 21 agencies to implement 26 projects with total project costs of almost \$420 million.



California Statewide Groundwater Elevation Monitoring (CASGEM)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Data Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	CASGEM implements SBX7 6, establishing a permanent groundwater elevation monitoring program to track seasonal and long term trends in California's 515 alluvial groundwater basins <ul style="list-style-type: none"> • Uses locally managed programs to collect and report groundwater elevation data • Uses an online system for data submittal and public access to groundwater data • Requires DWR to prioritize the groundwater basins • Requires DWR to conduct groundwater basin assessments and identify basins subject to overdraft 			
Measurable Objectives	<ul style="list-style-type: none"> • Number of groundwater basins with a designated Monitoring Entity • Extent of groundwater elevation monitoring in the groundwater basins • List of prioritized basins based on criteria in Water Code • Number of basin assessments completed • Identification of basins subject to overdraft 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • Local water agencies • Counties • ACWA 		<ul style="list-style-type: none"> • Department of Public Health 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> • Local water agencies • Counties 		<ul style="list-style-type: none"> • Private well owners • Counties 		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Understanding of the groundwater basins can lead to improved management to reduce overdraft of groundwater basins.			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Groundwater elevations and understanding of the groundwater basins provides basic data to support and evaluate groundwater transfers.			
<input checked="" type="checkbox"/> Increase Water Supply	Groundwater elevations and basin assessments provide fundamental information to evaluate and implement conjunctive use, recharge, and groundwater banking.			
<input checked="" type="checkbox"/> Improve Water Quality	Groundwater elevations in conjunction with water quality data and groundwater basin assessments can be used to better manage areas with poor and threatened water quality.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Provides data on groundwater elevations throughout state which supports better understanding of groundwater to manage groundwater resources.			
<input checked="" type="checkbox"/> Improve Flood Management	Better understanding of the groundwater basins can identify basins that can be used for recharge in floodplains.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	CASGEM Online System is partially integrated with Water Data Library and accepts the groundwater elevation data for the monitored basins and provides the public access to the data in tabular and map based formats.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Local agencies submit groundwater elevations			Q1 2012				
DWR submit status report to Legislature and Governor			Q1 2012				
DWR to make data available to the public			Q1 2012				
DWR to prioritize groundwater basins			Q2 2012				
DWR to conduct groundwater assessments			TBD – contingent on funding				
DWR submit status report to Legislature and Governor			Q1 2015				
DWR to identify basins subject to overdraft			TBD – contingent on funding				
Lead	Mary Scruggs		mscruggs@water.ca.gov				
Website	http://www.water.ca.gov/groundwater/casgem/						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	CASGEM Status Report to Legislature & Governor (currently at Resources Agency)					
	<input checked="" type="checkbox"/> Brochure(s)	http://www.water.ca.gov/groundwater/casgem/documents.cfm					
	<input checked="" type="checkbox"/> Fact Sheet(s)	http://www.water.ca.gov/groundwater/casgem/help/OnlineSystemPublic.pdf					
	<input checked="" type="checkbox"/> Multimedia(s)	CASGEM presentations; CASGEM Online System http://www.water.ca.gov/groundwater/casgem/online_system.cfm					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	As needed						
Public Meetings / Open Houses	As needed						
Interactive Workshops	As needed						
Standing Workgroups	ACWA Groundwater Committee (Quarterly)						
Other	GRA Webcast on CASGEM Online System for Groundwater Professionals (March)						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> • IRWM Planning and Implementation Grants • Water Quality and Quantity • California Water Plan 						
Support To Other IWM Topics	<ul style="list-style-type: none"> • California Water Plan • Water Transfers • IRWM Planning and Implementation Grants • Water Quality and Quantity • Water PIE 						
Budget & Funding (in 1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input checked="" type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input checked="" type="checkbox"/> Other -- Unfunded						
TOTAL FUNDING							

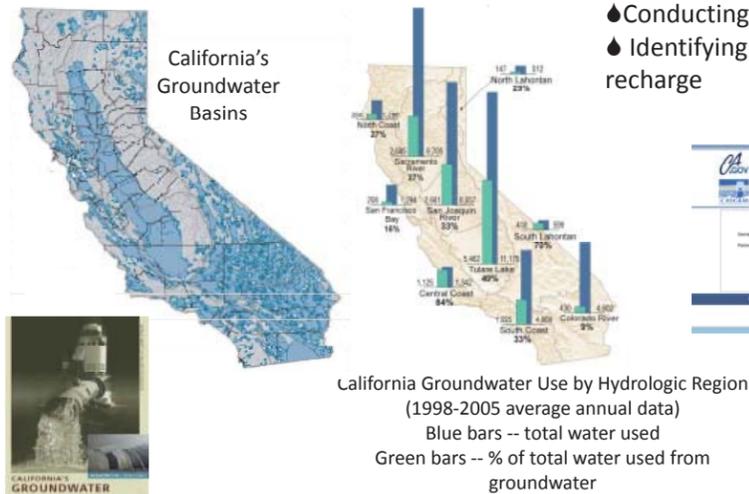


CASGEM: California Statewide Groundwater Elevation Monitoring

The CASGEM program was created by the California Legislature as SBx7 6, a part of the 2009 Comprehensive Water Package. The intent of the CASGEM program is to establish a permanent, locally-managed program of regular and systematic monitoring in all of California's 515 alluvial groundwater basins. This established for the first time, a statewide program to collect groundwater elevations, facilitate collaboration between local monitoring entities and the Department of Water Resources, and report this information to the public. The program relies on voluntary local agencies to monitor and report groundwater elevations that demonstrate seasonal and long-term trends. Collection and evaluation of such data on a statewide scale is an important fundamental step toward improving management of California's groundwater resources.

Groundwater in California

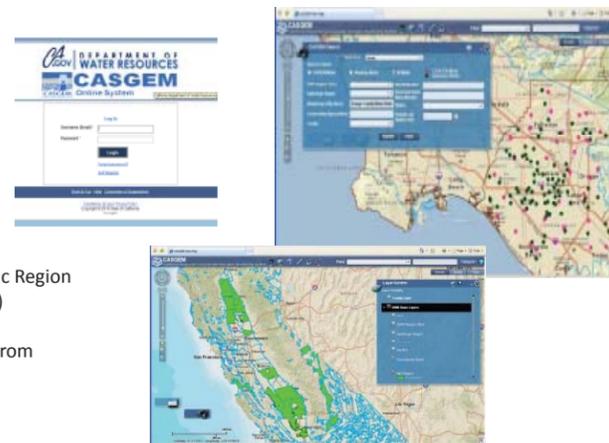
The occurrence, use, and reliance on groundwater varies throughout the California. There are 515 alluvial groundwater basins and subbasins identified in DWR Bulletin 118, underlying approximately 40 percent of the area of the State. Groundwater accounts for about 30 percent of the total water supply. In dry years, this increases to over 40 percent. Some coastal basins, cities, and rural areas are entirely dependent upon groundwater for their water supply. Groundwater is used for agricultural, industrial, domestic, and municipal purposes. With a projected population of 46 million by the year 2020, California's reliance upon groundwater will increase significantly.



DWR Bulletin 118

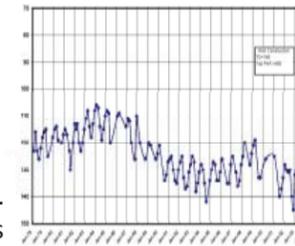
The CASGEM Online System currently includes:

- ◆ Tools for data submittal and for public access to groundwater data http://www.water.ca.gov/groundwater/casgem/online_system.cfm
 - ◆ Map for viewing and searches
 - ◆ Help manuals for using the online system
- Contingent on funding, DWR's further implementation of the CASGEM Program includes:
- ◆ Expanding and maintaining the statewide network of voluntary Monitoring Entities
 - ◆ Maintaining and enhancing the CASGEM Online System for data submittal and public access to groundwater data
 - ◆ Prioritizing the groundwater basins
 - ◆ Evaluating extent of statewide groundwater monitoring
 - ◆ Monitoring groundwater elevations in basins where no local entity has agreed to perform the monitoring functions
 - ◆ Conducting groundwater basin assessments and identify regional trends
 - ◆ Identifying basins subject to overdraft based on pattern of pumping and recharge



Why is groundwater elevation monitoring important?

The depth of groundwater changes in response to natural seasonal and long-term fluctuations in recharge, as well as variations caused by pumping. In order to protect and sustain the state's precious groundwater supply, proper management of this limited resource is imperative. Groundwater elevations are needed for the evaluation of the groundwater resource as well as well interference, overdraft, conjunctive use projects, and effects of drought conditions on groundwater. The baseline data collected under the CASGEM program can help to detect potential problems such as subsidence and overdraft in a groundwater basin. The data can also be used to plan for future water supply demands. Monitoring groundwater elevations in the state's 515 alluvial groundwater basins and subbasins is a fundamental component of successful groundwater management.



Hydrograph of groundwater elevations over time



Groundwater elevation contour map

How can groundwater elevation data be used?

Groundwater elevation measurements can be used in many ways to evaluate groundwater conditions within a basin. Two of the most common ways the data are used are to create hydrographs and groundwater elevation contour maps. Hydrographs depict changes in groundwater elevations in a well or wells over the measurement period, which can demonstrate seasonal and long-term trends. Groundwater elevation contour maps depict groundwater elevations and flow directions, which can show the effect of pumping and recharge.



Groundwater levels compared to other Drought periods
● Above ● About the Same ● Below



Measuring groundwater elevation



Monitoring well



What does the future hold for CASGEM?

Groundwater data collected by local agencies will increase over time, providing information essential to protect and sustain California's groundwater resources. The greatest obstacle to CASGEM continuation and success is the lack of dedicated funding for program execution by DWR and the local agencies participating as Monitoring Entities and cooperating agencies. The legislation enacting the program did not include funding. The CASGEM program is underfunded for the scope of the work mandated in the Water Code. Local agencies also struggle to comply with CASGEM requirements due to budget constraints and cutbacks. Success of this program is dependent on securing long-term funding at the State and local levels. Although the CASGEM program has made tremendous progress over the past two years, there is still a long way to go. At some point in the not too distant future, maybe Californians will have greater awareness of their groundwater resources and see signs such this one in Missoula, Montana.

Land and Water Use Data

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Data Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Collaborate with Department of Water Resources' Division of Integrated Regional Water Management Regions Offices to produce land and water use data for the California Water Plan Update: <ul style="list-style-type: none"> • Provide Quality Assurance / Quality Control for land use surveys and water use • Develop methods for mapping crops using remote sensing • Provide tools to support consistent and accurate data entry • Estimated regional and statewide agricultural water use • Develop mathematical water use models 			
Measurable Objectives	<ul style="list-style-type: none"> • Collect Public Water System Statics data • Compile regional and statewide agricultural water use • Update attributer tool • Identify fields producing winter/spring crops using remote sensing • Conduct statewide irrigation method survey • Update crop coefficients 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • Department of Food and Agriculture 				
Operating Agencies / Partners		Land Use Agencies / Partners		
		<ul style="list-style-type: none"> • Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Promote use of new crop coefficients			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Provide land use data that would aid water transfer			
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Provide land use inputs for groundwater and surface water models			
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Compile and review urban data quality of urban uses for 2008 and 2009			Q1 2012				
Compile and review the data quality of managed wetlands uses for 2008 and 2009			Q2 2012				
Compile and review the data quality of agricultural uses for 2008 and 2009			Q3 2012				
Complete CALSIMETAW (CWUETAW) database			Q3 2012				
Remote sensing crop identification NR pilot project			Q1 2013				
Compile and review urban data quality of urban uses for 2010 and 2011			Q2 2014				
Determine crop coefficients for 4 major crops			Q4 2017				
Lead	Simon Eching		seching@water.ca.gov				
Website	http://www.water.ca.gov/landwateruse						
Key Program Information Materials	<input type="checkbox"/> Report(s)						
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input checked="" type="checkbox"/> Multimedia(s)	SIMETAW, CUP+, Irrigation Method surveys, Irrigation crop acres and water use					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> • Agricultural acreage by Detail Analysis Unit /County • Agricultural water uses and demand by Detail Analysis Unit /County • Urban water uses and demand by sectors by Detail Analysis Unit /County • Managed wetland uses by Detail Analysis Unit/County 						
Support To Other IWM Topics	<ul style="list-style-type: none"> • Finance assistance \$786,000 • Data quality control • Land and Water Use Data • California Water Plan • Water use models • Crop coefficient estimation method • PWSS Data 						
Budget & Funding (in 1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
<input type="checkbox"/> Other							
TOTAL FUNDING							

Land and Water Use

Division of Statewide Integrated Water Management
Water Use and Efficiency Branch

Manucher Alemi

Simon Eching

Morteza Orang

Dong Chen

Cayle Little

Gholam Shakouri

Jean Woods

Ramesh Gautam

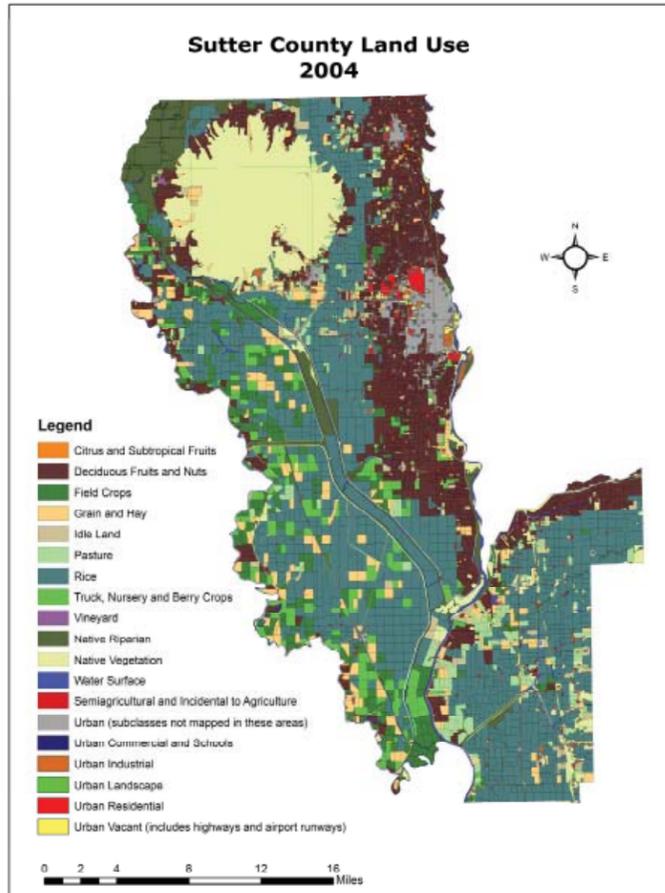
Scott Hayes

Mohammad Mostafavi

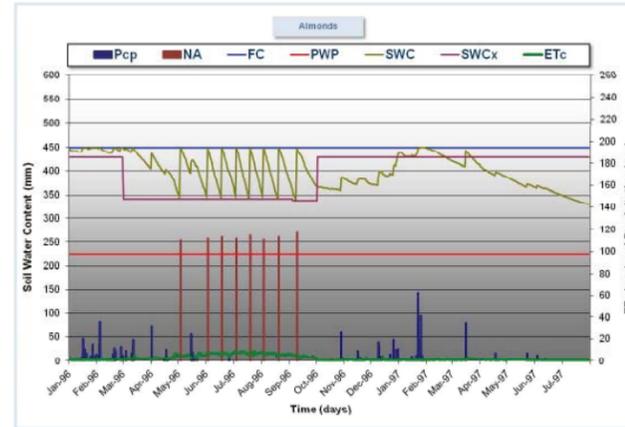
Data is the infrastructure of decision making.

Our digital crop maps and water use estimates are the foundation of statewide water planning.

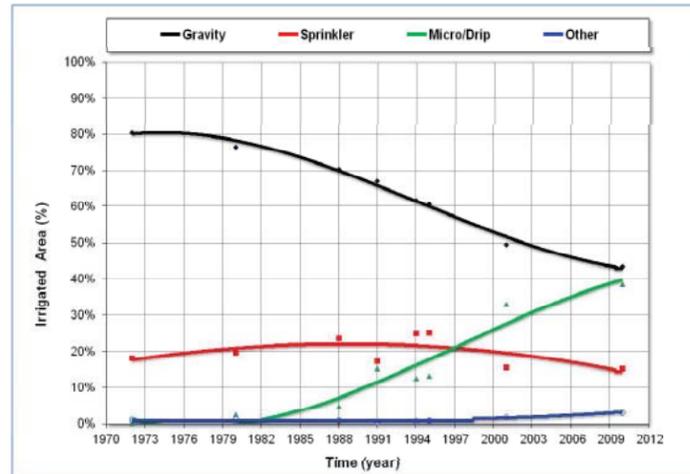
Our data is also utilized for groundwater and surface water modeling, economic impact analyses, environmental restoration and infrastructure planning.



Crop acreages developed through land use surveys are used to estimate the quantity of water applied to and consumed by crops throughout California.



Daily soil water balance is modeled to estimate crop water use.



Surveys of irrigation methods quantify the change in irrigation methods over time.

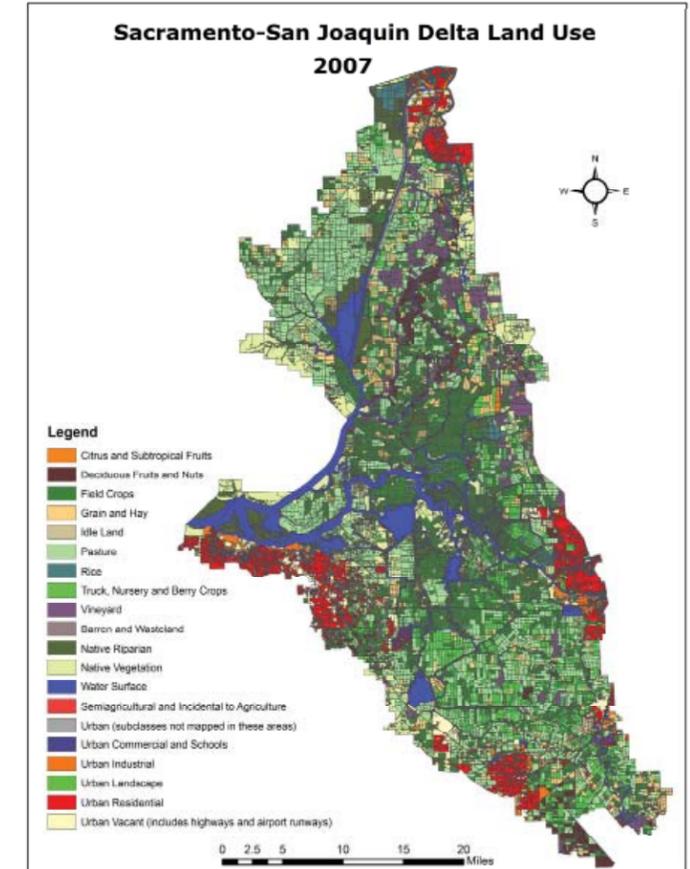


In 2011, the Land and Water Use Section collected water use data from water purveyors representing 800 California public water supply systems.



During land use surveys, each agricultural field within a study area is visited to identify crops. Aerial photos are used to delineate agricultural fields and urban areas.

U.S.D.A. National Agriculture Imagery Program (NAIP), 2009



Land use surveys of crops grown in the Delta have provided information needed for setting South Delta water quality standards and for modeling water flows.



Cabbage



Peppers



Pasture



Almonds



Hay



Safflower



Watermelon



Turf Farm (Sod)

California Irrigation Management Information System (CIMIS)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Data Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To provide reference evapotranspiration (ETo) and weather data to the general public and various agencies for irrigation scheduling, water balance analyses, flood management, energy generation, environmental studies, pest management, weather forecasting, fire fighting, and research. To accommodate the growing demand for CIMIS data, the unit has plans to:</p> <ul style="list-style-type: none"> Expand the weather station networks Use remote sensing to fill spatial data gaps Upgrade software and hardware Work with various agencies 			
Measurable Objectives	<ul style="list-style-type: none"> Make ETo and weather data available at 2-km resolutions by coupling remotely sensed data with point measurements. Improve the quality of CIMIS data by updating the existing QA/QC systems. Upgrade the CIMIS hardware and software to make more accurate data available in a timely manner. Upgrade CIMIS labs to facilitate and enhance the calibration of various sensors. Expand outreach activities to educate the public about CIMIS. Work closely with Federal, State, and local agencies to improve the models that CIMIS uses to estimate ETo. Use CIMIS data to mitigate the effects of drought and climate change. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Bureau of Reclamation Universities 		<ul style="list-style-type: none"> NASA USDA 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Local water agencies Landscapers Growers Consultants 				
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	CIMIS is a tool that helps determine the exact amount of water plants/crops need.			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Knowing how much water a plant needs reduces water losses due to over-irrigation. Quantifying evaporative losses helps reservoir operators to be more efficient.			
<input type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality	Helps reduce surface runoff, hence pollution.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Reduce waste by determining right amount of resources needed for specific purpose.			
<input checked="" type="checkbox"/> Improve Flood Management	A simple water balance analysis can be used to estimate the amount of flood in a given area thereby designing a better flood management system.			
<input type="checkbox"/> Improve Admin/Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Upgrade CIMIS labs		Q2 2012				
Upgrade CIMIS software and hardware		Q3 2012				
Implement Spatial CIMIS move		Q4 2012				
CIMIS Workshop		Q2 2013				
Remote sensing crop coefficient pilot project		Q2 2013				
CIMIS Quality Control publication		Q1 2014				
ETo forecasting		Q3 2017				
Lead	Manucher Alemi	malemi@water.ca.gov				
Website	http://www.cimis.water.ca.gov					
Key Program Information Materials	<input type="checkbox"/> Report(s)	Title(s)				
	<input checked="" type="checkbox"/> Brochure(s)	WCN, CATI Update,				
	<input checked="" type="checkbox"/> Fact Sheet(s)	CIMIS, ETo Zones				
	<input checked="" type="checkbox"/> Multimedia(s)	PowerPoint presentations				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities						
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other	Presentations at various workshops and conferences.					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Weather station maintenance Publication assistance 					
Support To Other IWM Topics	<ul style="list-style-type: none"> CIMIS Weather Data Financial assistance \$491,000 					
Budget & Funding (in 1,000s)						
Forecasted Budget		11/12	12/13	13/14	14/15	15/16
Expected Funding	<input checked="" type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Other: Ag&Urban ERPA					
	TOTAL FUNDING					



California Irrigation Management Information System (CIMIS)

Water Use and Efficiency Branch

Division of Statewide Integrated Water Management

Manucher Alemi

Simon Eching, Bekele Temesgen, Neil Rambo, Jared Birdsall

- ❖ CIMIS was developed in 1982 by the California Department of Water Resources (DWR) and UC Davis.
- ❖ It is a network of over 140 active, automated weather stations that collect weather data and provide reference evapotranspiration (ET_o) data and weather parameters to the public.
- ❖ DWR took management of CIMIS in 1985 and it has undergone several upgrades since.

How does CIMIS work and who uses the data?



A typical CIMIS station

How does CIMIS work?

- Each station carries various sensors, a solar panel, a modem, and a datalogger.
- Sensors are polled every minute.
- Hourly averages/totals are calculated from the 60 minute-by-minute readings.
- Daily averages/totals are calculated from the 1440 minute-by-minute readings.
- Hourly and daily values are stored in the datalogger.
- The dataloggers are polled at predetermined time intervals and the stored data downloaded by a CIMIS Server.
- Solar radiation, air temperature, relative humidity, precipitation, soil temperature, wind speed, and wind direction are measured at the station.

Data Acquisition, Processing, and Storage

- Data retrieved from loggers using phone lines and IP addresses.
- Net radiation, ET_o, and other intermediate parameters calculated.
- Measured and computed parameters stored in CIMIS databases for retrieval by users. Via the CIMIS web site, web services, and ftp address.
- Measured and computed parameters are stored in CIMIS databases for retrieval by users.

Users:

- Growers
- Water agencies
- Consultants
- Public agencies
- Researchers
- Homeowners
- Engineers
- Forecasters
- Farm advisors
- Fire fighters
- Investigators
- Others

Who owns CIMIS stations, what is the data used for, how does CIMIS address spatial data gaps?

Major Uses:

- Irrigation scheduling
- Water resources planning
- Pest control
- Frost protection
- Growing degree day calculation
- Power generation
- Weather forecasting
- Water balance analysis
- Fire fighting
- Air quality monitoring
- Structural design
- Modeling
- Research

Who owns the CIMIS stations?

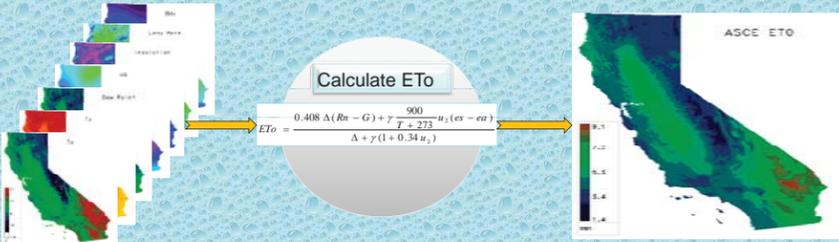
- DWR
- Local water agencies
- Cities
- Universities
- Federal agencies
- State agencies
- Private industries
- Conservation districts
- School districts
- Individual growers

Remote Sensing

To address the problem of Spatial data gaps, CIMIS, in cooperation with UC Davis, developed Spatial CIMIS, which couples remotely sensed satellite data from GOES to point measurements at individual CIMIS stations to estimate ET_o at 2-km grid.

Major Steps

- ✓ Generate data layers from remote sensing and interpolation models.
- ✓ Calculate ET_o at each grid from the data layers using the Penman-Monteith equation.
- ✓ Create and store daily maps of ET_o.



Calculate ET_o

$$ET_o = \frac{0.408 \Delta (R_n - G) + \gamma \frac{900}{T + 273} u_2 (e_s - e_a)}{\Delta + \gamma (1 + 0.34 u_2)}$$

CIMIS Contacts: To contact CIMIS staff, visit <http://www.cimis.water.ca.gov/cimis/welcomeStaff.jsp> or email us at: DWRCIMISPublicContact@water.ca.gov

Snow Surveys/Runoff Forecasting

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	DWR is responsible for the issuance of <i>Bulletin 120: Water Conditions in California</i> and the Water Supply Index (WSI) products for the Sacramento and San Joaquin River systems. Bulletin 120 is issued monthly February through May each year with weekly updates provided in between. This bulletin provides valuable statewide water conditions information including the statewide snow survey results and the forecast for the April through July runoff volume for dozens of rivers statewide. The WSI products are issued monthly December through May (and two in-house products are produced October and November) and provide a water year runoff index for the 8 main rivers of the Sacramento and San Joaquin valley system, defining the expected runoff into water year classifications ranging from critical to wet. Additionally, the WSI provides a water year runoff volume for the Sacramento Valley rivers.			
Measurable Objectives	Provide accurate and timely forecasts for the State Water Project, the Central Valley Project (USBR) and the nearly one hundred cooperating agencies of the California Cooperative Snow Surveys program			
Key Agency & Partner Interaction				
<p>The partners of the California Cooperative Snow Survey :</p>				
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Results used to estimate annual water supply availability and project deliveries.			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Snow Course Maintenance activities coordinated with USFS & National Park Service			
<input checked="" type="checkbox"/> Improve Flood Management	Complete snowpack estimates to support snowmelt/runoff forecasting			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Develop models and tools for improved forecasting and data analysis			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	Respond to hundreds of media inquiries regarding CA water conditions annually			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Feb Bulletin 120	Q1 Every Year					
Mar Bulletin 120	Q1 Every Year					
Apr Bulletin 120	Q2 Every Year					
May Bulletin 120	Q2 Every Year					
Colorado River Board Report	Jan-Jun					
Lake Davis/Frenchman Lake Forecast	Jan-Jun					
Seasonal 20-Day Snowmelt Forecast	Apr-Jul					
Sacramento Valley Water Supply Index	Jan-Jun					
San Joaquin Valley Water Supply Index	Jan-Jun					
Sacramento River Water Year Runoff Forecast	Jan- Jun					
Full Natural Flow Report	Weekly					
Snow Conditions Report	Weekly					
Lead	David Rizzardo	daver@water.ca.gov				
Website	http://cdec4gov.water.ca.gov/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>B120/Water Supply Indices/Specialized Forecasts</i>				
	<input checked="" type="checkbox"/> Brochure(s)	<i>Weekly e mail products</i>				
	<input checked="" type="checkbox"/> Fact Sheet(s)	<i>Program Summary</i>				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Hundreds of media and public water conditions inquiries annually					
Public Meetings / Open Houses						
Interactive Workshops	Annual Snow Meeting					
Standing Workgroups						
Other	SWP Contractors Meeting					
Internal Coordination (11/12 only)						
Support From Other IWM Topics						
Support To Other IWM Topics						
Budget & Funding (in \$1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input checked="" type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					



California Cooperative Snow Surveys Program

Dave Rizzardo – Hydrology Branch – Hydrology and Flood Operations Office – Division of Flood Management

The partners of the California Cooperative Snow Survey:



History of the CCSS Program

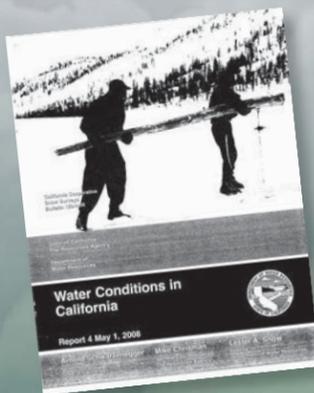
In 1908, Dr. James E. Church created the Mt. Rose Snow Sampler and conducted the first snow survey two years later at Mt. Rose in the Lake Tahoe Basin.

The California State Assembly formally established the California Cooperative Snow Surveys Program in 1929 with section 228 of the California Water Code directing the Division of Water Resources (the predecessor to DWR) to coordinate the program.



Public Outreach

The CCSS conducts annual meetings of the Cooperative Program as a forum for program accountability as well as to share advancements in remote sensing and seasonal forecast modeling. CCSS conducts monthly media snow surveys near Echo Summit as a means to inform the public of the current snow pack and water supply conditions.

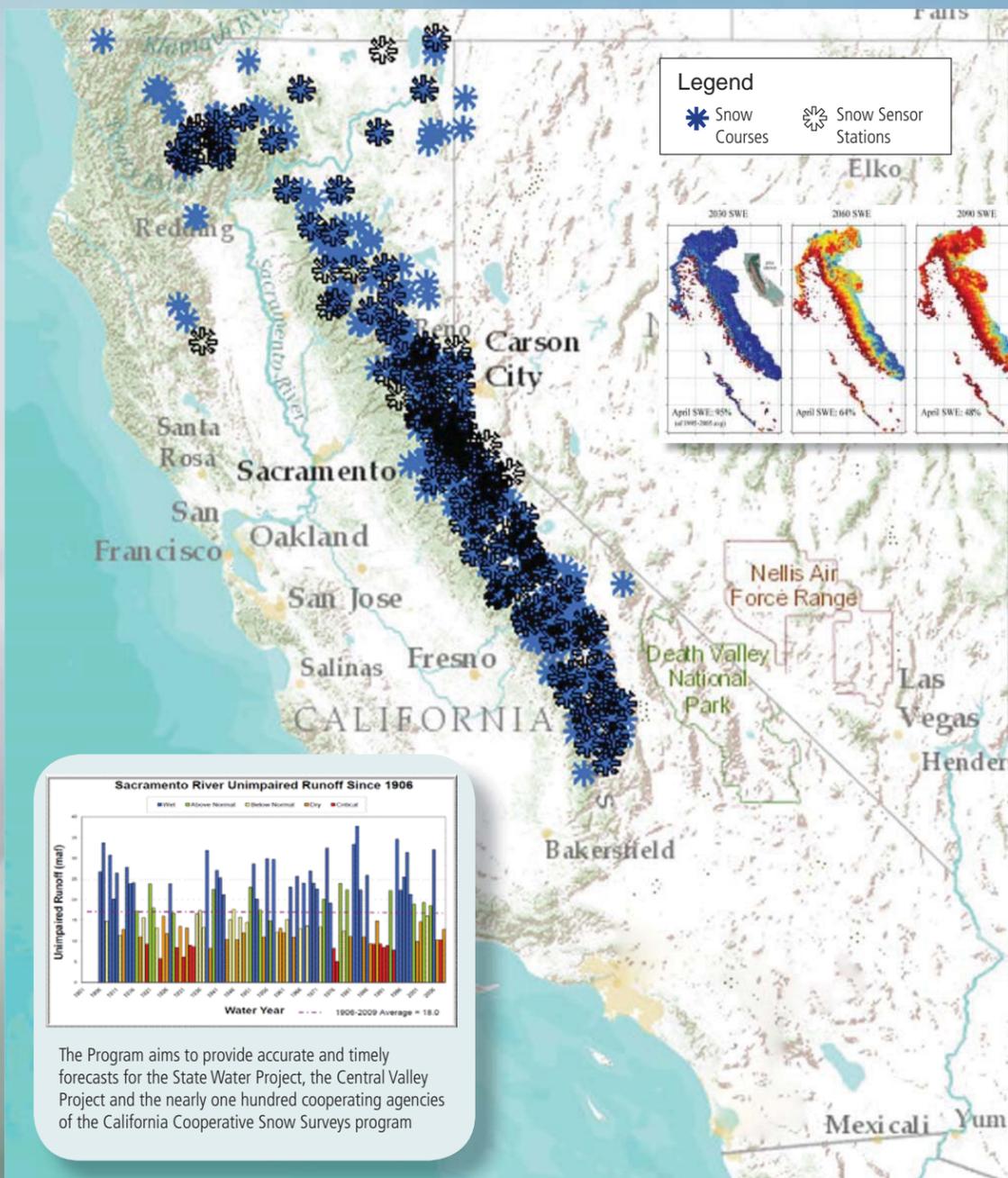


Water Supply Forecast Products

Bulletin 120: Water Conditions in California is issued monthly February through May each year with weekly updates provided in between.

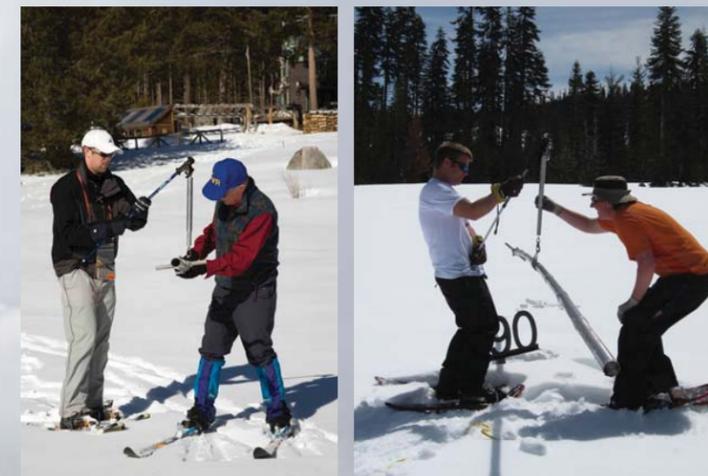
This bulletin provides valuable statewide water conditions information including the statewide snow survey results and the forecast for the April through July runoff volume for dozens of rivers statewide.

The Sacramento Valley and San Joaquin Valley Water Supply Index forecasts are issued monthly December thru May each year and define the water year type classification for each system.

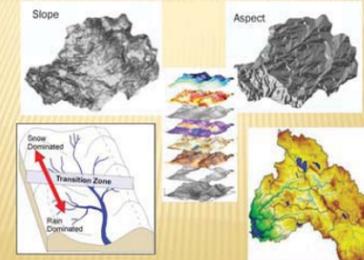


Climate Sensor Network

Expansion of the current remote sensor network to include more complete climate data stations – snow sensors (water content), soil moisture and temperature sensors, snow depth sensors, wind profilers, solar radiation, rain gauges. Also adding a network of snow level radar.



PHYSICAL MODELING OF WATERSHEDS



Decision Support Tools

Will complement our statistical forecasting, but enable us to model the physical parameters of the watershed and model what happens if those physical parameters change (i.e. climate change, forest change, decreased meadows, etc).



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



Flood Corridor Program

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input checked="" type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting				
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local					
Functional Area / Name	Flood Protection Projects and Grants							
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration				
Scope	<p>The Flood Corridor Program (FCP) is a unique local assistance program focused on funding projects that provide nonstructural flood risk reduction integrated with natural resource and agricultural land protection. The FCP was created by voter-approved bond measures (Propositions 13, 84, and 1E) in recognition of the need to achieve the compatible beneficial functions and values of flood risk reduction integrated with habitat protection and agricultural land preservation. FCP seeks to achieve this by creating and restoring natural floodways, reconnecting streams and rivers to their historic floodplains, and using other nonstructural approaches such as setting back levees, creating detention basins, and removing structures from flood-prone areas. The FCP includes three flood protection grant programs:</p> <ul style="list-style-type: none"> • Flood Protection Corridor Program (Propositions 13 and 84) • Floodway Corridor Program (Proposition 1E) • Central Valley Nonstructural Grants Program (Proposition 1E) 							
Measurable Objectives	<ul style="list-style-type: none"> • Funding agreements for 12 awarded projects by 2013 • Solicitation for new projects by 2014 • Reduce flood risk in all funded projects • Protect habitat and/or agricultural acreage for all funded projects 							
Key Agency & Partner Interaction								
Implementing Agencies / Partners	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • Local public agencies • Nonprofit organizations </td> <td style="width: 20%; border: none;"> Regulatory Agencies / Partners <ul style="list-style-type: none"> • USFWS • USACE • NRCS • NMFS </td> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • State Lands Commission • Coastal Commission </td> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • CVFPB • RWQCBs • CDFG/ WCB </td> </tr> </table>				<ul style="list-style-type: none"> • Local public agencies • Nonprofit organizations 	Regulatory Agencies / Partners <ul style="list-style-type: none"> • USFWS • USACE • NRCS • NMFS 	<ul style="list-style-type: none"> • State Lands Commission • Coastal Commission 	<ul style="list-style-type: none"> • CVFPB • RWQCBs • CDFG/ WCB
<ul style="list-style-type: none"> • Local public agencies • Nonprofit organizations 	Regulatory Agencies / Partners <ul style="list-style-type: none"> • USFWS • USACE • NRCS • NMFS 	<ul style="list-style-type: none"> • State Lands Commission • Coastal Commission 	<ul style="list-style-type: none"> • CVFPB • RWQCBs • CDFG/ WCB 					
Operating Agencies / Partners	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • 100s LMAs (RDs, LDs, etc.) • NOAA/ NWS </td> <td style="width: 20%; border: none;"> Land Use Agencies / Partners <ul style="list-style-type: none"> • USBR • CDFG </td> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • State Parks • Cities, communities </td> <td style="width: 20%; border: none;"> <ul style="list-style-type: none"> • Land trusts • Private land owners </td> </tr> </table>				<ul style="list-style-type: none"> • 100s LMAs (RDs, LDs, etc.) • NOAA/ NWS 	Land Use Agencies / Partners <ul style="list-style-type: none"> • USBR • CDFG 	<ul style="list-style-type: none"> • State Parks • Cities, communities 	<ul style="list-style-type: none"> • Land trusts • Private land owners
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Resource Management Strategies to Address Goal & Objectives								
<input checked="" type="checkbox"/> Reduce Water Demand	Potential to fund projects that use floodwaters to increase groundwater recharge, thus reducing costs (e.g., to agriculture) from surface water demand during periods of reduced availability							
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Reduce flood recurrence interval by nonstructural approaches (setback levees, detention basins, floodplain reconnection, channel modification, acquisition of flood-prone land, flood easements, removal of flood-prone structures) to improve flood corridor functions							
<input checked="" type="checkbox"/> Increase Water Supply	Increase floodplain activation and transitory water storage which may provide substantial increases in groundwater recharge							
<input checked="" type="checkbox"/> Improve Water Quality	Restore floodplain riparian and wetland habitat that can provide improved water quality depending on location							
<input checked="" type="checkbox"/> Practice Resource Stewardship	Achieve DWR mission and goals of bond measures - achieve compatible beneficial functions and values of flood risk reduction integrated with habitat protection and agricultural land preservation							
<input checked="" type="checkbox"/> Improve Flood Management	Fund nonstructural approaches that give fluvial systems room to convey floodwaters more safely and reduce flood risk and flood damage costs							
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Share grant program administration tools and lessons learned with other DWR grant programs (e.g., Quarterly Grant Coordination Meetings) to provide consistent and efficient delivery of grant programs							
Program Support Function								
<input type="checkbox"/> Fiscal								
<input type="checkbox"/> Communication								
<input type="checkbox"/> Personnel Development								

Milestone & Timeline						
Key Milestone / Deliverable	Date (by Quarter / Year)					
Approval of > \$45M in grant awards	Q1 2012					
Funding agreements for > \$45M in grant awards (12 projects)	Q4 2012					
Public release of new FCP Proposal Solicitation	Q4 2012					
Approval of grant awards for > \$35M	Q4 2013					
Complete > 20 new projects statewide (>\$80M new grants)	Q4 2018					
Lead	Earl Nelson	enelson@water.ca.gov				
Website	www.water.ca.gov/floodmgmt/fpo/sgb/fpcp/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Program Management Plan (draft)				
	<input checked="" type="checkbox"/> Brochure(s)	Flood Corridor Program Handout				
	<input checked="" type="checkbox"/> Fact Sheet(s)	Project Fact Sheets				
	<input checked="" type="checkbox"/> Multimedia(s)	2 FloodSAFE articles; press releases				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Public review and comment period for: <ul style="list-style-type: none"> • Application and guidelines: February 2011 • Draft funding recommendations: February 2012 					
Public Meetings / Open Houses	Application workshops (5): Fresno, Riverside, San Diego, Sacramento, and Red Bluff					
Interactive Workshops	12 public hearings to be held for awarded projects in 2012					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> • Conservation Strategy • Environmental Stewardship • Real Estate • Bond Management System 	<ul style="list-style-type: none"> • Project Management Support • Legal • Climate Change • Bond Accountability 				
Support To Other IWM Topics	<ul style="list-style-type: none"> • Local Levee Assistance Program • Early Implementation Program • Flood Emergency Response • USACE/CVFPB Projects 	<ul style="list-style-type: none"> • USACE/CVFPB Studies • Flood Control Subventions Program • Environmental Stewardship • Central Valley Flood Protection Plan 				
Budget & Funding (in \$1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input checked="" type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
TOTAL FUNDING						

**FLOOD CORRIDOR PROGRAM
NONSTRUCTURAL GRANT PROGRAM**

Funds flood risk reduction projects statewide, integrated with habitat conservation and restoration and/or agricultural land protection.

Accomplishments

- 27 Projects - Over \$91M in grants awarded
- Proposition 13 - 20 projects (over \$63M)
- Proposition 84 - 8 projects (over \$28 M)
- Over 15,000 acres of land with flood risk reduction, habitat conservation and restoration, and agricultural land protection
- Propositions 1E and 84 - 12 new awards pending approval

Nonstructural Grant Projects

- Create and restore natural floodways
- Reconnect streams to historic floodplain
- Setback levees and earthen-bottom detention basins
- Land acquisition
- Remove structures from flood-prone areas

FLOOD CORRIDOR MANAGEMENT PLANNING

- Stewardship of natural and constructed resources
- Reduced permitting delays for system maintenance
- Multi-agency coordination
- Lower operations and maintenance costs
- Project site evaluation



**Flood Corridor Program
Project Locations**

- Funded Projects
- New Projects

St. Helena Project



Awarded \$3.2M of the \$32.5M project to the City of St. Helena. Protected 468 homes from Napa River flooding. Included setback levees, restoration of a natural floodway corridor and floodplain, and a flood-wall with a pedestrian path. Over 8 acres of high-value native riparian forest and fish habitat were restored.

San Diego River Project



Awarded \$4.2M of the \$13.4M project to the Lakeside River Park Conservancy in Lakeside. Removed a pinch point and modified the floodplain to abate periodic flooding of a mobile home park. Restored 90 acres of native floodplain habitat. Gravels removed from the former aggregate mine site were used in a nearby Caltrans project, saving taxpayers \$6M.

Program Manager: Earl Nelson
Flood Projects Office
Division of Flood Management

ENVIRONMENTAL TECHNICAL ASSISTANCE

- For Flood Projects Office
- For Central Valley Flood Protection Board
- Pre-CEQA concept development
- CEQA/NEPA review
- Environmental permitting

ADVANCE MITIGATION

- Land acquisition
- Habitat restoration planning and design
- Advance mitigation for system construction, operations and maintenance



FLOOD POLICY AND REGIONAL PLANNING

- Assist Department in policy development
- Regional planning and feasibility studies

San Joaquin River Restoration Program

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input checked="" type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation and Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Perform studies and designs to promote the Restoration Goal of a settlement to restore and maintain fish populations in good condition in the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish. Perform data collection, analysis, and implementation of projects to ensure program does not increase flood risk to surrounding lands. Ensure restoration actions have no adverse material impacts to third parties. 			
Measurable Objectives	<ul style="list-style-type: none"> Evaluate and design channels and floodplains to convey restoration flows. Evaluate and design channels, floodplains and structures to support anadromous and native fish and allow them to safely migrate through the study reach. Ensure restoration flow releases do not significantly increase flood risk by evaluating and improving existing levees. Collect and evaluate flow and sediment data and develop numerical models to evaluate channel response to restoration flows. Coordinate with local landowners and water agencies to understand existing operations within the study area. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> U. S. Bureau of Reclamation U. S. Fish and Wildlife Service National Marine Fisheries Service CA Department of Fish and Game 		<ul style="list-style-type: none"> U. S. Fish and Wildlife Service National Marine Fisheries Service CA Department of Fish and Game U.S. Army Corps of Engineers 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Lower San Joaquin Levee District Central Valley Flood Protection Board 		<ul style="list-style-type: none"> CA State Lands Commission 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Enhance spawning and riparian habitat through effective designs of channel, floodplains, and structures.			
<input checked="" type="checkbox"/> Improve Flood Management	Evaluate and improve conditions of existing levees and levee foundations to reduce threat of levee stability impacts from restoration flows.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

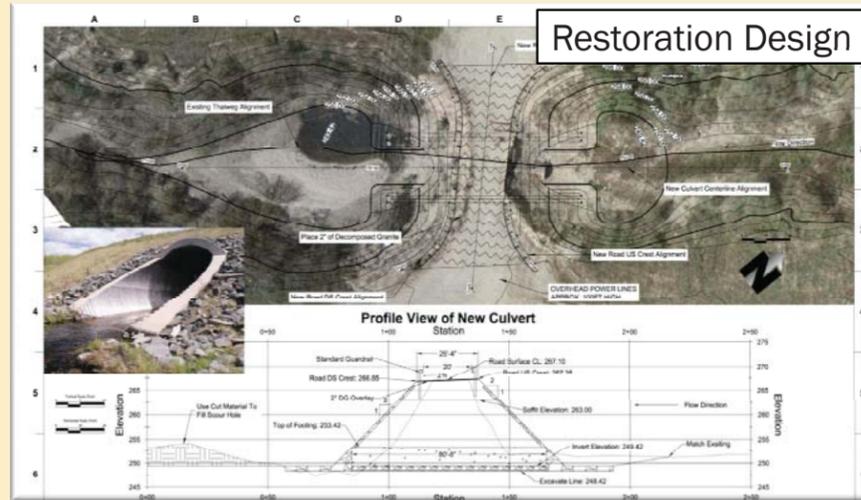
Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Final SJRRP Program EIS/R		Q2 2012				
Public Draft Reach 4B & Eastside Bypass EIS/R		Q3 2012				
Public Draft Mendota Pool Bypass and Reach 2B EIS/R		Q4 2012				
Reintroduction of Chinook salmon		Q4 2012				
Final Reach 4B & Eastside Bypass EIS/R		Q3 2013				
Final Mendota Pool Bypass and Reach 2B EIS/R		Q1 2014				
Begin Seepage Projects		Q1 2014				
Begin Flood Projects		Q4 2014				
Lead	Paul Romero	promero@water.ca.gov				
Website	http://www.water.ca.gov/rivers/sanjoaquin/program/ ; http://www.restoresir.net					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>PMP; Annual Reports; Monitoring and Analysis Plan; Annual Technical Reports; Fish Management Plan; MPB/Reach 2B; Reach 4B</i>				
	<input checked="" type="checkbox"/> Brochure(s)	<i>Program Tri-fold; Program Updates;</i>				
	<input checked="" type="checkbox"/> Fact Sheet(s)	<i>FAQ (12/07); PL 111-11; Keep Me Informed List</i>				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Draft PEIS/R; Draft MPB/R2B EIS/R; Draft R4B EIS/R					
Public Meetings / Open Houses						
Interactive Workshops	Restoration TFG; Fisheries TFG; Water Management TFG; Seepage and Conveyance TFG					
Standing Workgroups	Fisheries; Engineering; Water Management					
Other	Various stakeholder and landowner meetings on site-specific projects; CVFPB Briefings; Regulatory Agency Briefings.					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> CV Flood Protection Plan Non-Urban Levees Evaluation CV Floodplain Evaluation and Delineation Conservation Strategy 					
Support To Other IWM Topics	<ul style="list-style-type: none"> CV Flood Protection Plan Conservation Strategy 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84—Resources Agency)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					



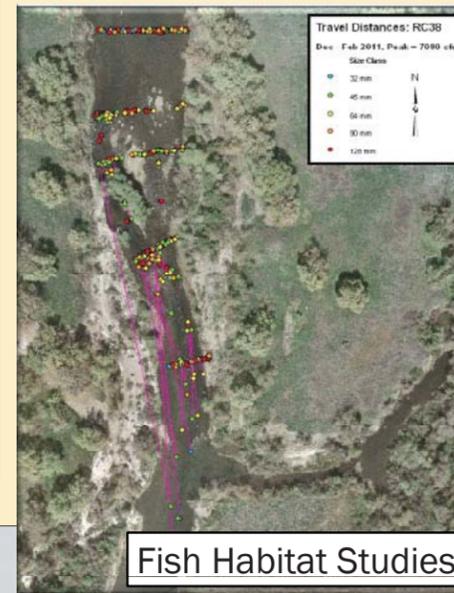
DEPARTMENT OF WATER RESOURCES San Joaquin River Restoration Program



Hydraulic Modeling



Restoration Design



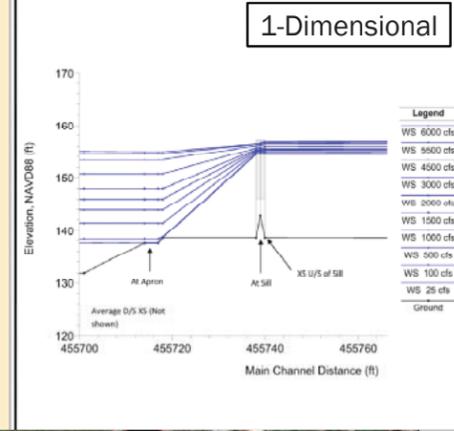
Fish Habitat Studies

- RESPONSIBILITIES AND EXPERTISE**
- ❖ Flood Risk Evaluation
 - ❖ Fisheries Studies
 - ❖ Restoration Design
 - ❖ Water Quality & Quantity Monitoring
 - ❖ Environmental Compliance

SAN JOAQUIN RIVER RESTORATION PROGRAM
SUFFICIENT FISH PASSAGE
QUICK REFERENCE

THE FOLLOWING DATA ARE BASED ON PRELIMINARY MODELS

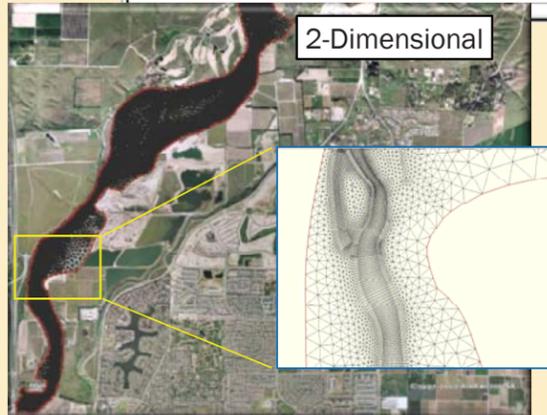
HEC-RAS FLOW MODEL FINDINGS FOR ADULT CHINOOK SALMON UPSTREAM MIGRATION



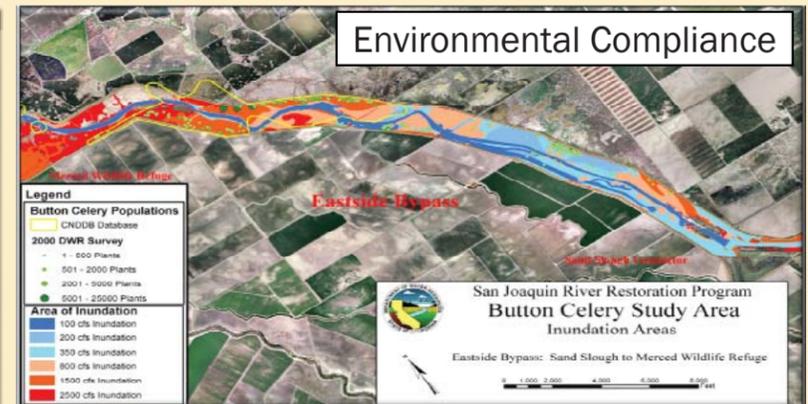
Geotechnical Evaluations



Monitoring & Data Collection



- SIGNIFICANT EFFORTS**
- ❖ Develop hydraulic models to determine flow properties in channels and structures
 - ❖ Conduct flow, sediment, and habitat monitoring and data collection
 - ❖ Design fish passage structures and levees for restoration projects
 - ❖ Evaluate fish passage at existing structures along migratory path
 - ❖ Perform environmental studies, permitting, and CEQA compliance
 - ❖ Conduct geotechnical evaluations to identify flood risks
 - ❖ Conduct engineering studies for sediment transport and fisheries habitat



Recreation Planning & Implementation

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input checked="" type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System (State Water Project)		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Grants Administration and Local Support			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Plan for, enhance, and evaluate recreation conditions and use at State Water Project facilities consistent with legislative and regulatory mandates, in coordination with other DWR programs, state agencies, and local agencies. (Refer to the Davis-Dolwig Act and WREM 44 regarding inter-agency and inter-program roles.)			
Measurable Objectives	<ul style="list-style-type: none"> Monitor annual recreation usage at each SWP facility and report in Bulletin 132. Identify and evaluate plans and opportunities for improved or new facilities and report in Bulletin 132, the California Water Plan, at meetings, and in plan reviews. Update and enhance DWR's recreation website (4 facilities/year for next 4 years). Plan and host six C.A.S.T. for Kids events per year, and propose new recreation activities in coordination with local sponsors. Identify & support annual applications to DPR's Land & Water Conservation Fund. Support DWR's FERC relicensing with facility information, bibliography, & contacts. Plan and lead inter-agency and inter-program coordination meetings, and update WREM 44 to clarify program responsibilities. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> State Water Project California Department of Parks and Recreation California Department of Boating and Waterways 		<ul style="list-style-type: none"> Federal Energy Regulatory Commission 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> California Department of Parks and Recreation East Bay Regional Park District Los Angeles County Dept. of Parks and Recreation Parks Management Company 		<ul style="list-style-type: none"> US Forest Service US Bureau of Reclamation 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Planning for new conveyance must consider recreational opportunities.			
<input checked="" type="checkbox"/> Increase Water Supply	Planning for new surface storage and conveyance must consider recreational opportunities.			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Actions consistent with the CWP Water-dependent Recreation strategy, DWR's Strategic Planning Goals 1-3 & 5-6, FERC requirements, and the Davis-Dolwig Act will enhance SWP recreational facilities and opportunities.			
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Improved coordination between agencies and programs facilitates integrated, efficient enhancements to public recreation facilities and opportunities.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Host C.A.S.T. events	6/year in June and Sep-Oct, see event schedule					
Submit Chapter 13 of Bulletin 132	annual, date varies					
Update and enhance recreation web pages	1 facility/quarter					
Submit L&WCF grant application	annual, September					
Review recreation planning reports and content	many each year, dates vary					
Host SWP Recreation Coordinating Committee meeting	2/year, May and December, dates vary					
Host DWR ECC Recreation Committee meeting	4/year, dates vary					
Update WREM 44	December 2012					
Lead	J. Pierre Stephens	jstephe@water.ca.gov				
Website	http://www.cd.water.ca.gov/recreation/recplanning.cfm http://www.water.ca.gov/recreation/ (PAO website)					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Hundreds of recreation reports – see Recreation Bibliography				
	<input checked="" type="checkbox"/> Brochure(s)	Many PAO brochures covering facilities and activities				
	<input checked="" type="checkbox"/> Fact Sheet(s)	Recreation Program Overview, March 2011				
	<input checked="" type="checkbox"/> Multimedia(s)	CAST events: KGO radio story, 'Funky Fishing' TV story, photos, +				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Direct outreach managed by partner programs & agencies (PAO, relicensing, DPR, ...)					
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> SWP O&M (reservoir level info, outage coordination) Public Affairs (outreach, events, State Agency Roundtable on Recreation) Environmental stewardship, fish and wildlife enhancement 					
Support To Other IWM Topics	<ul style="list-style-type: none"> SWP hydro-relicensing, compliance, and reporting IRWM, Delta, CWP, & statewide integrated water & flood management planning SWP/PAO outreach and reporting Reservoir investigations, Davis-Grunsky grant admin., regional coordination 					
Budget & Funding (in 1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Other – SWP					
TOTAL FUNDING						

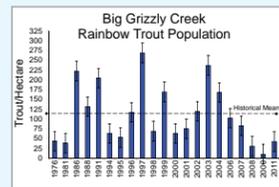
RECREATION PLANNING AND IMPLEMENTATION PROGRAM

J. Pierre Stephens • Division of Integrated Water Management • North Central Regional Office • Regional Planning & Coordination Branch

SWP Recreation Planning

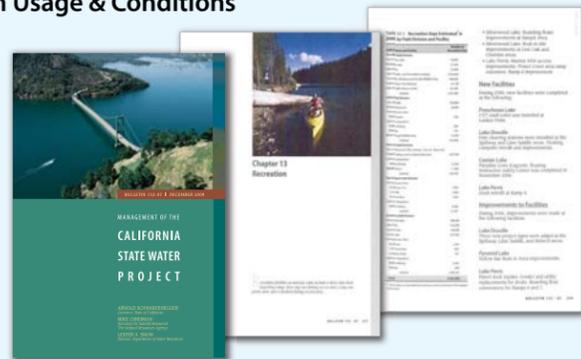
Monitor Conditions

Regional office staff conduct field surveys and gather recreation and fishery data from partner agencies. For example, Northern Region Office has monitored fish population and recreation use in the upper Feather River watershed for over 30 years.



Report Recreation Usage & Conditions

Program staff and partners have published over 100 recreation usage reports and investigations spanning the last 50 years, and write the recreation chapter for the Bulletin 132 annual series, "Management of the State Water Project". Program and Public Affairs Office staff are currently updating DWR's recreation website with interactive maps and information.



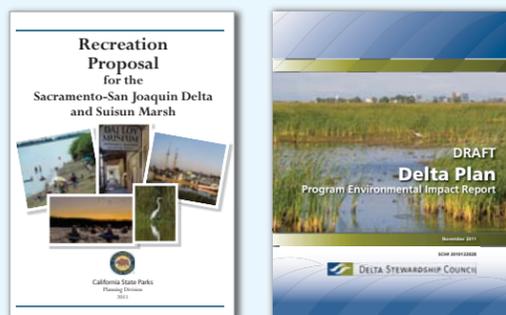
Develop Plans

Program staff and partners have published over 75 recreation development and management plans for SWP recreation facilities spanning the last 50 years. All reports and plans are listed in the Program's 2011 bibliography and archived at the region offices.



Review Plans

The Program coordinates the review of recreation plans that affect the SWP.



Mission and Authorization

Plan for, enhance, and evaluate recreation conditions and use at State Water Project (SWP) facilities consistent with legislative and regulatory mandates, in coordination with other DWR programs, state agencies, and local agencies.

DWR has overall responsibility under the Davis Dolwig Act (Water Code sections 11900-11925) to plan for recreation use at SWP facilities, and must coordinate with the Department of Parks and Recreation and the Department of Boating and Waterways, who have primary responsibility for designing, constructing, operating and maintaining the recreation facilities. This Program began in 1972, and specific responsibilities are described in WREM 44a.

SWP Recreation Facilities

DWR and its partners have developed water-based recreation facilities, visitor centers, and programs at 15 SWP reservoirs as well as along the California Aqueduct. Visitation totaled 4.7 million recreation days in 2007.



New interactive Oroville recreation map on DWR public website

Coordination and Events

Coordinate with partners

The multi-agency SWP Recreation Coordinating Committee (RCC) has met at least once a year since 1960 and coordinates planning, design, construction, operation, maintenance, and activities at SWP recreation facilities.



Responsibilities for SWP Recreation Facilities under the Davis-Dolwig Act

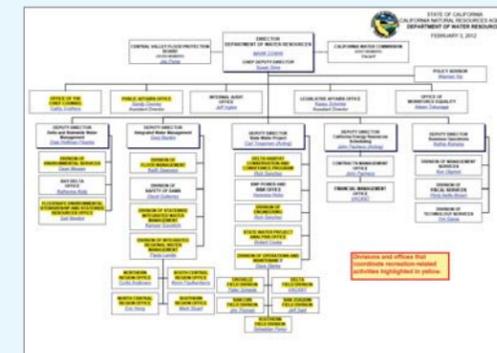
	Plan	Construct	Operate
Department of Water Resources	responsible	review	review
Department of Parks and Recreation	consult w/ DWR	responsible	responsible
Department of Boating and Waterways	consult w/ DWR	responsible (boating facilities)	
Local park districts			as contracted

The program coordinates with partners engaged in the following: DWR, DPR, DBW, IRWM, and local recreation planning; DWR, DPR, DFG hatchery, USFS, and local facility operations; DWR public engagement, safety, and FERC hydro-relicensing activities.

Meetings of the Oroville Recreation Coordinating Agencies (ORCA) facilitate coordination between the groups involved in Lake Oroville recreation improvements.

Coordinate within DWR

DWR's Environmental Coordinating Committee Recreation Sub-committee, established in 2011, coordinates between over 20 DWR offices and programs that are involved in recreation-related activities.



Host Recreation Events

DWR and partner agencies currently host six Catch a Special Thrill (C.A.S.T.) for Kids fishing events at SWP reservoirs to provide opportunities for disabled children to learn about water and boating safety and to use and enjoy public recreation facilities.



The Program coordinates with the Public Affairs Office and multiple partners to host Aquatic Adventure Camps at SWP reservoirs. In 2011, DWR hosted nine of these award-winning two week water safety summer camps for children, where they learned about swimming and boating safety, CPR, camping, and environmental education.



Delta Flood Emergency Preparedness, Response, and Recovery Plan

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	To prepare a plan for responding and recovering from Delta flood emergencies that: <ul style="list-style-type: none"> provides emergency response and recovery guidance for DWR emergency personnel; reduces response time for Delta flood emergencies; provides initial estimates for time and costs to recover flooded Delta islands; and is integrated with the plans of other Delta flood emergency response partners. 			
Measurable Objectives	<ul style="list-style-type: none"> Implementable Plan by the beginning of 2013. Begin response facilities construction in FY 2014 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> US Army Corps of Engineers (USACE) Five Delta counties 		<ul style="list-style-type: none"> Department of Fish and Game (DFG) US Fish and Wildlife Service (USFWS) National Marine Fisheries Service (NMFS) 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> USACE Five Delta counties 		<ul style="list-style-type: none"> Five Delta counties 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Improve and coordinate response to Delta flood emergencies and provide guidance for responding to and recovering from Delta island failures.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
DWR Executive Review Draft Plan	Q2 2012					
Partner Agencies Review Draft Plan	Q3 2012					
Public Review Draft Plan	Q4 2012					
Final Plan	Q1 2013					
Response Facilities Feasibility Study	Q3 2012					
Response Facilities CEQA Document	Q4 2012					
Begin Facilities Design and Construction	Q3 2013					
Lead	Stephen Bradley		bradley@water.ca.gov			
Website						
Key Program Information Materials	<input type="checkbox"/> Report(s)					
	<input checked="" type="checkbox"/> Brochure(s)	Delta Flood Emergency Preparedness, Recovery and Response Program				
	<input type="checkbox"/> Fact Sheet(s)					
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities						
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Delta Levees and Environmental Engineering Delta Water Export Delta Water Quality 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Regional Flood Plans Area Flood Planning Flood Management 					
Budget & Funding (in \$1,000s)						
Forecasted Budget						
Expected Funding						
	<input type="checkbox"/> General Fund	11/12	12/13	13/14	14/15	15/16
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Delta Flood Emergency Preparedness, Response, and Recovery Plan

Stephen Bradley – Division of Flood Management – Hydrology and Flood Operations Office – Hydrology Branch

The Delta Flood Emergency Preparedness, Response and Recovery Plan is a plan to prepare for, respond to, and recommend recovery from Delta flood emergencies that:

- provides emergency response and recovery guidance for DWR emergency personnel;
- reduces response time for Delta flood emergencies;
- provides initial estimates for time and costs to recover flooded Delta islands; and
- is coordinated with the plans of other Delta flood emergency response partners.

Implementable Plan
by the beginning of 2013.

Begin response facilities construction
in FY 2014.



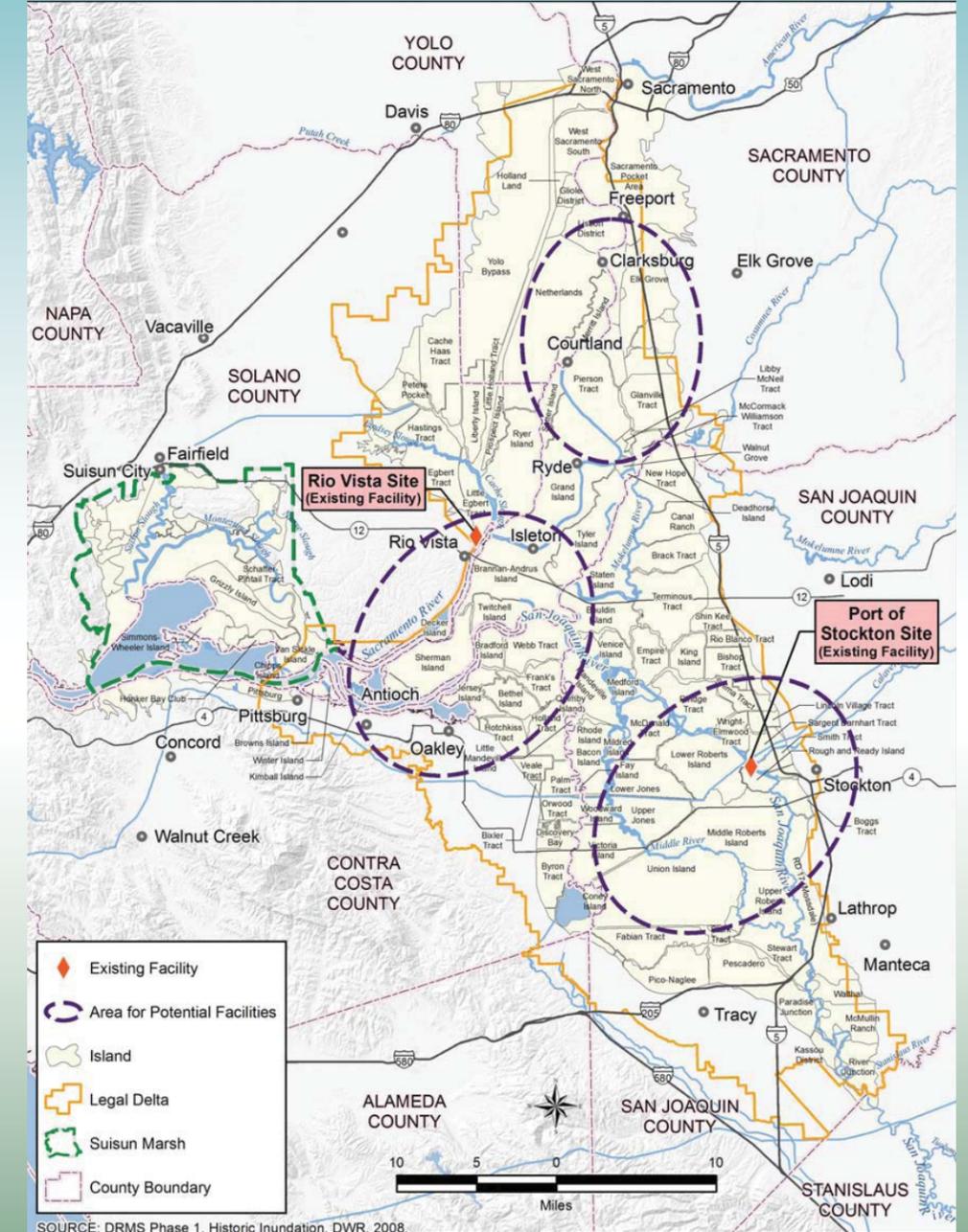
DWR is planning facilities strategically located in the Delta for stockpiling and land-water transferring of flood fight materials to quickly respond to flood emergencies. The picture above shows a stockpile of flood fight materials located at the Port of Stockton.



The purpose of a Multi-Agency Plan is to ensure DWR's Plan works in concert with the flood emergency plans of other State, federal, and local agencies within the Delta. The intent of this effort is to have a coordinated, effective multi-agency response during a Delta Flood Emergency.



The goal of the plan is to improve and coordinate preparedness for Delta flood emergencies and provide guidance for responding to and recovering from Delta island failures.



Existing and potential future facilities for flood fight materials storage.



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



Water Plan – Statewide Water Analysis Network

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Data Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<p>Apply collaborative methods to facilitate consensus in the development and application of existing and new analytical tools and technologies to achieve these technical goals and outcomes:</p> <ul style="list-style-type: none"> Achieve better integration and consistency with other planning activities inside and outside of DWR Obtain consensus on quantitative deliverables Build a common conceptual understanding of the water management system Improve transparency of Water Plan information 			
Measurable Objectives	<ul style="list-style-type: none"> Planning for an uncertain future – Lead ongoing development of WEAP model to quantify multiple future scenarios to explore how key uncertainties affect water management. Modernizing Water Portfolios - Within 3 years develop an enterprise data management system to store and report water plan data for use by DWR's Regional Offices and DSIWM. Groundwater enhancements - Expand information about statewide and regional groundwater conditions in California Water Plan Update 2013. Water sustainability indicators – See Separate IWM Topic Integrating climate change analysis in DWR - By April 2012, develop guidance for choosing approaches and tools to address climate change in DWR planning documents Change in groundwater storage analysis tool – By June 2013, develop a multi-user GIS platform to implement geospatial query/analysis/reporting of groundwater level data. Water Planning Information Exchange – See Separate IWM Topic Integration of urban water management plans – Evaluate and make recommendations on how information produced for urban water management plans could be used more effectively. Common model schematic - Collaboratively develop a shared model schematic of California's water management system. Common conceptual model - Collaboratively develop a shared understanding and analytical approaches to describe, estimate, and forecast water demands in California 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners - State: Boating and Waterways, Sierra Nevada Conservancy, Native American Heritage Commission, Natural Resources, BTH, CalTrans		Regulatory Agencies / Partners - State: Waterboards, ARB, DFG, DPH, CalEPA, PUC, Energy Com, Coastal Com, OPC, DTSC, DSC Federal: USFWS, NOAA, USEPA		
Operating Agencies / Partners State: Cal EMA, Parks and Recreation, Federal: USACE, FEMA, US Bureau of Reclamation		Land Use Agencies / Partners - State: Governor's OPR, Conservation, Housing and Community development, SGC, DFA, CalFire, State Lands; Federal: US Forest Service, NRCS, USGS, USNPS, BLM		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Increase Water Supply	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Improve Water Quality	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Improve Flood Management	Evaluate performance of strategies			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Apply collaborative methods to facilitate consensus in the development and application of existing and new analytical tools and technologies			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

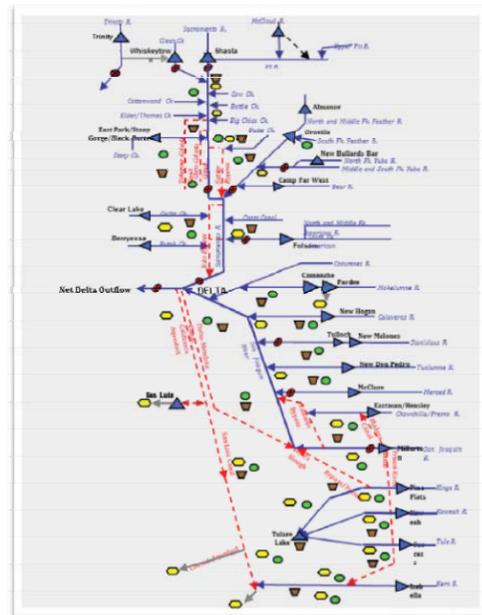
Milestone & Timeline						
Key External Milestone / Deliverable				Date (by Quarter / Year)		
Request for Offers released for Water PIE initial phase				Q1 2012		
Begin collaborative pilot studies on Water Sustainability Indicators				Q1 2012		
Water Plan Assumptions & Estimates released				Q2 2012		
Recommendations on modernizing Water Portfolio released				Q2 2012		
Initial WEAP results quantifying future water management actions				Q4 2012		
Final WEAP results quantifying future water management actions in the Water Plan				Q4 2013		
Change in Groundwater Storage tool completed				Q4 2013		
Lead	Rich Juricich		juricich@water.ca.gov			
Website	http://www.waterplan.water.ca.gov/swan					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>Integrated Data & Analysis, Chapter 6, Water Plan Update 2009</i> http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v1c6_datanalysis_cwp2009.pdf				
	<input type="checkbox"/> Brochure(s)					
	<input type="checkbox"/> Fact Sheet(s)					
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Comment period for Water Plan Assumptions & Estimates Report May-Dec 2012					
Public Meetings / Open Houses	Water Plan State Agency Steering Committee and Public Advisory Committee meetings					
Interactive Workshops	Fall 2012 Statewide Water Analysis Network workshop					
Standing Workgroups	Water Plan scenario and land use focus groups					
Other	Water Plan Regional Forum meetings					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Land & Water Use Data Water Use Efficiency Water Recycling and Desalination Surface Storage Investigation System Reoperation IWM Economic Assessments 					
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Sustainability Indicators Framework 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input checked="" type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Project					
	TOTAL FUNDING					

Statewide Water Analysis Network (SWAN)

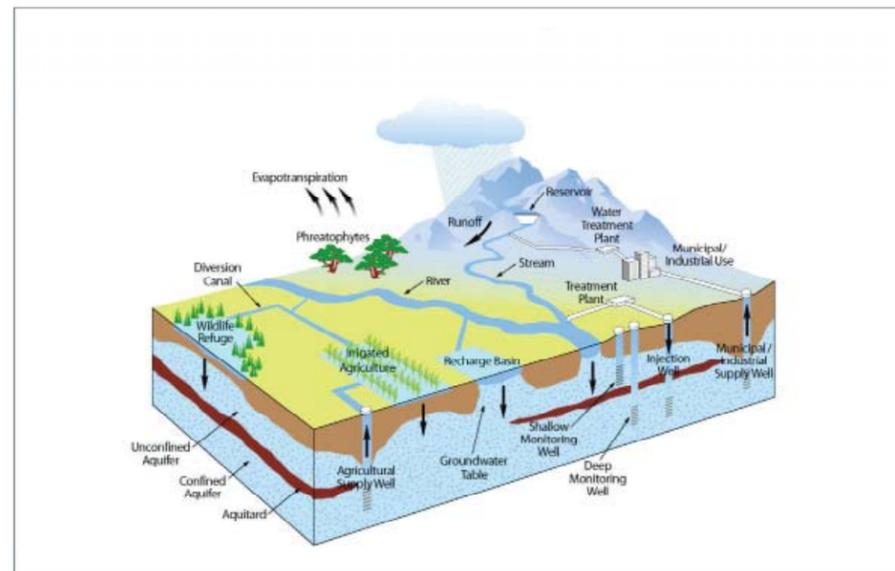
Statewide Integrated Water Management
 Integrated Data & Analysis Branch

Apply collaborative methods to facilitate consensus in the development and application of existing and new analytical tools and technologies to achieve these technical goals and outcomes:

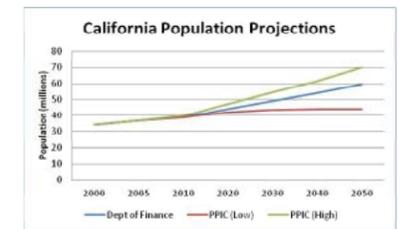
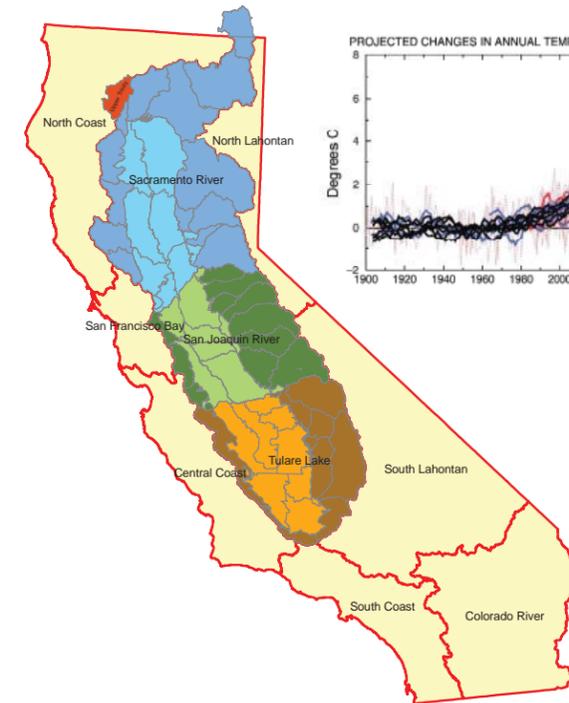
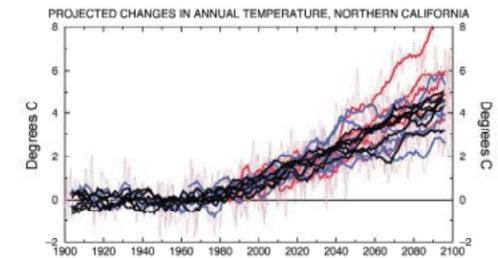
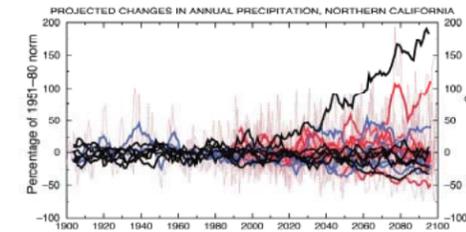
- Achieve better integration and consistency with other planning activities inside and outside of DWR
- Obtain consensus on quantitative deliverables
- Build a common conceptual understanding of the water management system
- Improve transparency of Water Plan information



Collaboratively develop a shared model schematic of California's water management system



Collaboratively develop a shared understanding and analytical approaches to describe, estimate, and forecast water demands in California



Lead ongoing development of WEAP model to quantify multiple future scenarios to explore how key uncertainties affect water management

System Reoperation

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation & Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	Conduct planning studies identifying reoperation strategies for the state's flood protection and water supply systems, including underutilized groundwater storage capacity, that optimize the following objectives: <ul style="list-style-type: none"> • Increase water supply reliability • Reduce flood hazards • Increase ecosystem protection and restoration 			
Measurable Objectives	<ul style="list-style-type: none"> • Engage surface and groundwater storage owners and operators and other experts to develop reoperation strategies primarily thru one-on-one communications. • Develop a model framework to simulate the performance of reoperation strategies. • Conduct modeling studies to quantify improvements from reoperation strategies. • Optimize the benefits for water supply, flood hazard reduction, and ecosystem protection and restoration for each strategy. • Evaluate the reoperation strategies on their ability to achieve the three objectives. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • U.S. Bureau of Reclamation 		<ul style="list-style-type: none"> • Not Currently Applicable 		
Operating Agencies / Potential Partners		Operating Agencies - continued		
We are contacting Kern WBA , Semitropic WSD, Orange Co. WD, Three Valleys Municipal WD, San Gabriel Basin WQ Auth, Inland Empire		Utilities –Chino Basin, Calleguas Municipal WD, Arvin-Edison WSD, Madera ID, Merced ID, Modesto ID, Turlock ID, San Joaquin Co. WAC		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Reoperate reservoirs and conveyance to manage flood releases in conjunction with groundwater banking operations generating additional water supply. Coordination with groundwater storage facilities could allow a larger flood pool without loss of water supply.			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Reoperate reservoirs and conveyance generating additional water supply for environmental restoration or reoperate to mimic a more natural riverine flow regime benefiting the ecosystem.			
<input checked="" type="checkbox"/> Improve Flood Management	Reoperate reservoirs and system to manage flood risks. Initial strategies focused on integrating SWP, CVP, and local projects.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline																																																															
Key External Milestone / Deliverable	Date (by Quarter / Year)																																																														
Plan of study	Q1 2011																																																														
Strategy formulation and refinement	Q2 2012																																																														
Reconnaissance-level evaluation	Q2 2013																																																														
Programmatic-level evaluation & descriptive report	Q2 2014																																																														
Lead	Ajay Goyal		agoval@water.ca.gov																																																												
Website	www.water.ca.gov/system_reop/																																																														
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Plan of Study																																																													
	<input checked="" type="checkbox"/> Brochure(s)	To be developed																																																													
	<input checked="" type="checkbox"/> Fact Sheet(s)	To be developed																																																													
	<input checked="" type="checkbox"/> Multimedia(s)	System Reoperation slideshows / 60 & 15 minute videos																																																													
External Communication & Engagement Approach (11/12 only)																																																															
Public Comment Opportunities	To be determined but not currently anticipated. It is not required by legislation.																																																														
Public Meetings / Open Houses	Briefed the California Water Plan Plenary Session – Oct 2011																																																														
Interactive Workshops	Briefed the California Water Plan State Agency Steering Committee – Aug 2011																																																														
Standing Workgroups	Will be developed on a project/strategy basis																																																														
Other	<ul style="list-style-type: none"> • Presentations/briefings to facility owners and operators, fisheries experts, and others are underway – 2011 thru 2012. See agencies on page 1. • Presentations at the CA Water Commission's Water Storage Workshops in Sept and Oct 2011. • Briefed ACWA Groundwater Subcommittee in Oct 2011 to garner local support. 																																																														
Internal Coordination (11/12 only)																																																															
Support From Other IWM Topics	<ul style="list-style-type: none"> • Central Valley Flood Protection Plan • Climate Change Also: <ul style="list-style-type: none"> • BDCP and ecosystem restoration goals • SWP & CVP operations 																																																														
Support To Other IWM Topics	<ul style="list-style-type: none"> • 2017 Central Valley Flood Protection Plan • California Water Plan 																																																														
Budget & Funding (in 1,000s)																																																															
Forecasted Budget																																																															
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	TOTAL FUNDING																																																														

SYSTEM REOPERATION STUDY

Senate Bill X2 1 authorized DWR to conduct planning and feasibility studies to identify potential options for reoperation of the state's flood protection and water supply systems that will optimize the use of existing facilities and groundwater storage capacity

DIVISION OF STATEWIDE INTEGRATED WATER MANAGEMENT
STATEWIDE INFRASTRUCTURE INVESTIGATIONS BRANCH
PROGRAM MANAGER - AJAY GOYAL



STUDY OBJECTIVES

IMPROVE

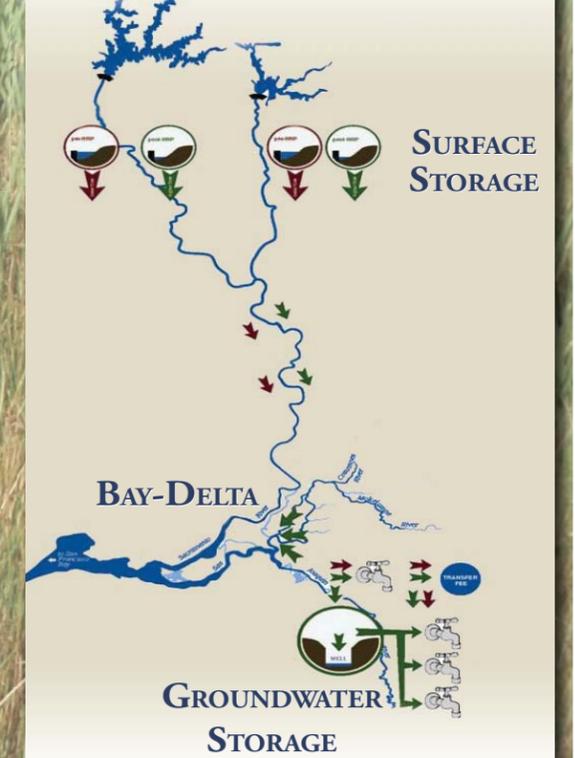
- Water supply reliability
- Flood hazard reduction
- Ecosystem protection and restoration

By:

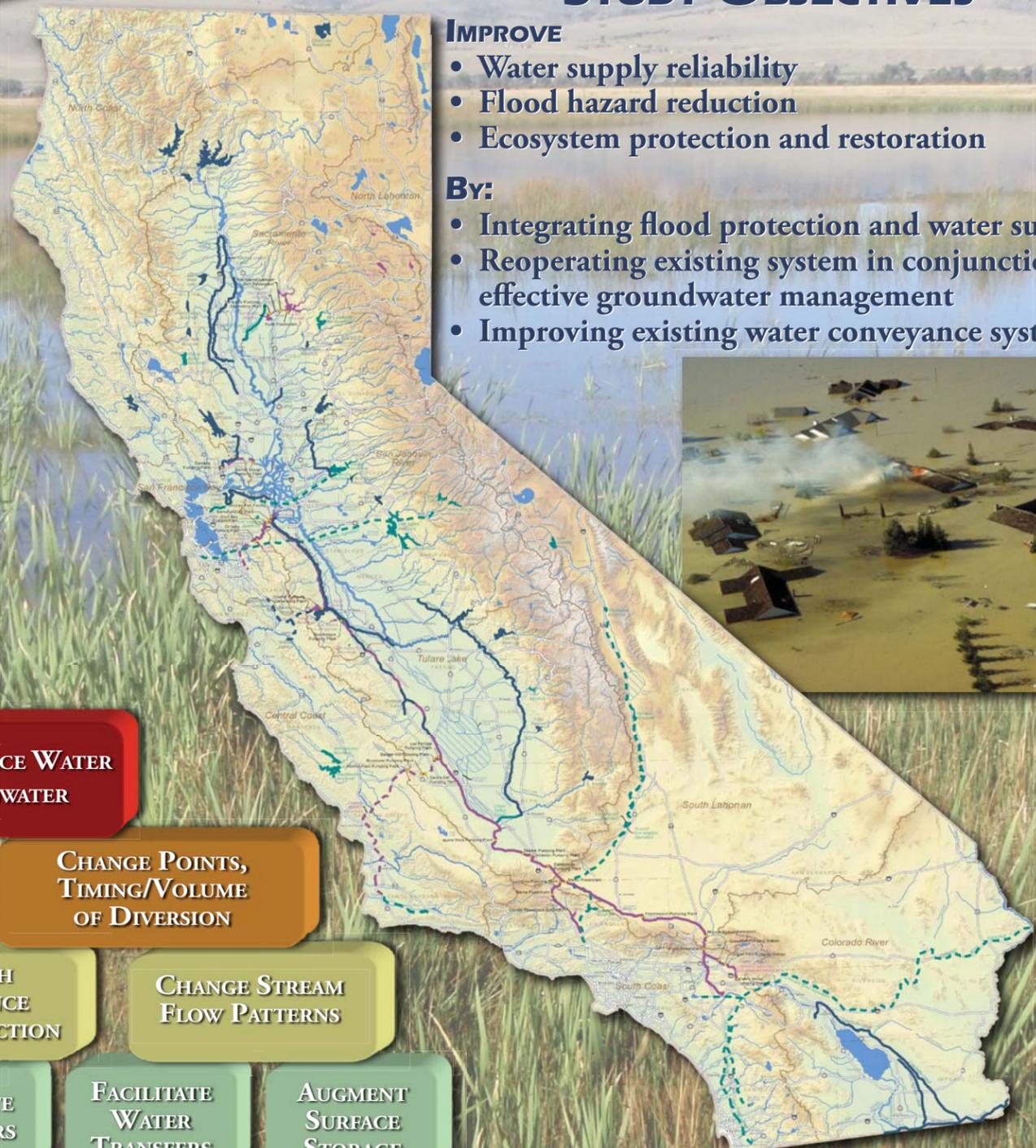
- Integrating flood protection and water supply systems
- Reoperating existing system in conjunction with effective groundwater management
- Improving existing water conveyance systems



EXAMPLE REOPERATION SCENARIO



PHASES OF SYSTEM REOPERATION STUDY



INTEGRATE SURFACE WATER AND GROUNDWATER

EXPAND FLOOD CONVEYANCE, REACTIVATE FLOODPLAINS

CHANGE POINTS, TIMING/VOLUME OF DIVERSION

INTEGRATE CVP, SWP, AND LOCAL PROJECTS

ESTABLISH CONVEYANCE INTERCONNECTION

CHANGE STREAM FLOW PATTERNS

RETROFIT DAMS

FISH PASSAGE FACILITIES

REOPERATE RESERVOIRS

FACILITATE WATER TRANSFERS

AUGMENT SURFACE STORAGE

WATER INFRASTRUCTURE

Water Transfers Program

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Water Use Efficiency / Drought Planning			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Facilitate bona fide water transfers by ensuring responsible transfers that protect the water rights of others and natural resources. Provide technical assistance to buyers and sellers to help them successfully negotiate the water transfers process. Facilitate the review of water transfer proposals by evaluating potential environmental impacts. Coordinate with Project Agencies to provide access to state and federal conveyance facilities to assist transfers and evaluate other modes of transfers. 			
Measurable Objectives	<ul style="list-style-type: none"> Release the Draft Technical Information for Water Transfers (DTIWT) document, typically annually, in coordination with Project Agencies. Conduct a public outreach and education program to help buyers and sellers successfully complete bona fide water transfers in a time efficient manner. Continue to refine crop ETAW values for cropland idling transfers and make technical information available to transfer participants and interested parties. Release final technical papers for long-term Giant Garter Snake (GGS) work study. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> DWR United States Bureau of Reclamation (USBR) State Water Contractors and San Luis 		<ul style="list-style-type: none"> State Water Resources Control Board (SWRCB) California Department of Fish and Game (CDFG) United States Fish and Wildlife Service (USFWS) 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> DWR USBR 		<ul style="list-style-type: none"> Various irrigation districts and municipalities throughout the State. 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Integrate water management across jurisdictions to develop long-term policies and simplified procedures for facilitating and implementing water transfers.			
<input checked="" type="checkbox"/> Increase Water Supply	Identify and support viable, bona fide, water transfers using SWP and other facilities to meet critical needs and other water shortages, while protecting area-of-origin and water rights, consistent with State requirements and in coordination with USBR.			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Develop transfers with multiple benefits; provide for sustainable use of resources; identify and mitigate potential impacts to third parties, and ensure protection of the legal rights of water users, the environment, and public trust resources.			
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

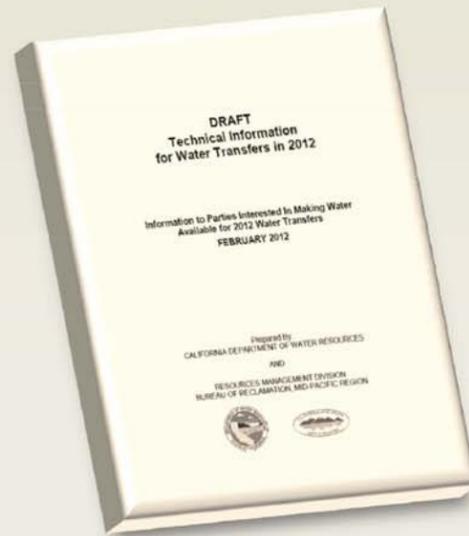
Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Status update due for first year Rice Water Use Study by U.C. Davis (UCD). Post revisions to DTIWT 2012 per 2011 Water Transfers Buyers/Sellers meeting discussions.	Q1 2012					
Begin 2012 field season for GGS Study by USGS and Rice Water Use Study by UCD.	Q2 2012					
UCD Draft Analysis Winter Wheat Water Use Study due.	Q3 2012					
Water Transfers Buyers/Sellers Workshop for DTIWT 2013.	Q3 2012					
Post 2013 DTIWT to Water Transfers Program website.	Q4 2012					
Water Transfers Buyers/Sellers workshop to discuss revisions to the 2013 DTIWT as posted to website.	Q4 2012					
Completed UCD Analysis for Rice Water Use Study due.	Q4 2012					
Lead	Tom Filler		tfiller@water.ca.gov			
Website	http://www.water.ca.gov/watertransfers/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Draft Technical Information for Water Transfers				
	<input type="checkbox"/> Brochure(s)					
	<input checked="" type="checkbox"/> Fact Sheet(s)	Under Development				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities						
Public Meetings / Open Houses						
Interactive Workshops	Semi Annual Water Transfers (WT) Buyers/Sellers meetings with interested parties					
Standing Workgroups	DWR WT Coordination Mtg, Delta Issues Mtg, Project Agencies WT Mtg, SWC WT Update Mtng.					
Other	Ongoing communications with SWPAO, DES, DWR Legal, DWR Regional Office staff, SWC members, various interested parties and other stakeholders such as potential water transfer participants.					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> California Water Plan, Bulletin 160 California Drought Contingency Plan California Water Sustainability Indicators 					
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan, Bulletin 160 California Drought Contingency Plan California Water Sustainability Indicators 					
Budget & Funding (in 1,000s)						
11/12 12/13 13/14 14/15 15/16						
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input checked="" type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Other -- SWP					
	TOTAL FUNDING					

WATER TRANSFERS PROGRAM

The Water Transfers Program promotes and facilitates responsible water transfers to provide for sustainable water resource management

Promote and Facilitate Water Transfers

- ✓ Develop Annual Technical Water Transfers Document



- ✓ Make water transfers information accessible to the public
- ✓ Hold stakeholder meetings and workshops
- ✓ Maintain water transfers website
- ✓ Provide guidance on the water transfers process
- ✓ Analyze past water transfers to determine effects
- ✓ Identify ways to improve future water transfers



Giant Garter Snake

Develop Endangered Species Act Compliance Information

The program is conducting the Long-term Giant Garter Snake Study to facilitate ESA compliance.

This study is being coordinated with the USBR, USFWS, CDFG, State Water Contractors, and local land owners.

The study will cost \$10 Million and will be completed over a 10-year period.



Conduct Cropping Pattern Water Use Studies

The Water Transfers Program leads studies of alternative cropping systems to enhance economic benefits to farmers participating in water transfers. These studies include:

-  Rice Water Use Study
-  Winter Wheat Water Use Study
-  Water Use for Rice Straw Decomposition

Water transfers are critical for helping California address numerous water management challenges including growing water demands, climate change, and an increasingly uncertain water supply.



Future Program Work

Future work will include conducting drought forecasting and sustainability indicator analyses to:

- better predict drought and climate change impacts to water supply
- help predict demand for water transfers
- better understand sustainable water yields for water transfers
- assist decision-makers in evaluating cumulative impacts of long-term water transfer programs



Studies will be performed to evaluate the effects of water transfers on:

- economic conditions
- agricultural, urban, and environmental communities

Contacts: Tom Filler
Al Vargas

Division of Integrated Regional Water Management
Regional Planning Branch

IRWM Strategic Plan (Strategic Plan for the Future of Integrated Regional Water Management)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System (statewide)		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Strategic Water Planning			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<p>The strategic plan will:</p> <ul style="list-style-type: none"> • build on the success of the Integrated Regional Water Management (IRWM) Program, • help enable, empower, and support regional entities by providing overall direction for the future of IRWM, • support the California Water Plan (CWP) by being a companion plan with a special focus on IRWM, one of the key initiatives of the CWP, • support proactive planning in the face of possible changes in bond/grant funding, • inform the Legislature of the past success of IRWM and its future potential, • inspire Regional Water Management Groups (RWMGs) to continue IRWM. 			
Measurable Objectives	<ul style="list-style-type: none"> • Phase I - Project Definition Report (project scoping), Background Summary Document, and <i>Project Management Plan</i> • Phase II - "Strategic Plan for the Future of IRWM" 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • DWR • Regional Water Management Groups and regional/local planning agencies throughout California 				
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> • Legislature • Other state agencies including the SWRCB and RWQCBs • Federal agencies including USBR and ACOE 				
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	IRWM incorporates the physical, environmental, societal, economic, jurisdictional, and legal aspects of water management into regional solutions through collaborative stakeholder processes to promote sustainable water use through all of these Resource Management Strategies. The strategic plan will help California communities further embrace and practice IRWM.			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Project Kickoff and Strategic Planning Workshop		Q4 2011				
Executive Interviews		Q4 2011				
Vision/Goals Exercise and Literature Review & Team Briefing		Q4 2011				
Draft Project Definition Report		Q1 2012				
Public Workshops		Q1 2012				
Final Project Definition Report and Project Management Plan		Q2 2012				
Strategic Plan for the Future of IRWM in California		Q1 2013				
Lead	Mike Floyd	mfloyd@water.ca.gov				
Website	www.water.ca.gov/irwmstratplan (in development)					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>Project Definition Report & Strategic Plan (both to be developed)</i>				
	<input type="checkbox"/> Brochure(s)					
	<input checked="" type="checkbox"/> Fact Sheet(s)	<i>Project Information</i>				
	<input checked="" type="checkbox"/> Multimedia(s)	<i>Video series on IRWM (in development)</i>				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Multiple opportunities at workshops and through correspondence					
Public Meetings / Open Houses	As needed/requested by stakeholders					
Interactive Workshops	Multiple workshops during the plan scoping and plan development phases					
Standing Workgroups	Oversight Committee, Working Committee (cross-program representation)					
Other	Interviews of IRWM practitioners, thought leaders, and key stakeholders					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> • California Water Plan, Bulletin 160 • Statewide Flood Management Plan • California Water Sustainability Indicators 					
Support To Other IWM Topics	<ul style="list-style-type: none"> • California Water Plan, Bulletin 160 • Statewide Flood Management Plan • All DWR IWM programs 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Strategic Plan for the Future of Integrated Regional Water Management

A strategic plan is needed to...

- Continue to build on the success of the IRWM program
- Further enable, empower, and support regional entities
- Better align State and Federal programs to support IRWM



The IRWM strategic plan is...

a long-term, future-oriented plan that will define a set of strategies and actions. It will describe a specific path from the present condition to the future vision. It will also define an approach for monitoring successes and adapting to challenges.

Benefits

- Advancement of IRWM
- Shared Vision for Funding Priorities
- Aligned Policies and Regulations
- Coordinated State and Regional Interests
- Sustainable Regional Solutions

Process



Be involved!

We welcome and encourage your input. Please subscribe to our mailing list by visiting www.water.ca.gov/irwmstratplan/ and get involved.

Mark Cowin | Director, DWR
"The Strategic Plan for the Future of IRWM in California is critical for ensuring the continued advancement of sustainable water resources management."



Voter-approved IRWM bond funds have profoundly improved water management in California over the past 10 years.



IRWM improves water management and helps ensure economic stability, environmental stewardship, public safety, and other benefits.

IRWM encompasses 87% of the state's area and 99% of its population.



State bond funds, the efforts of Regional Water Management Groups, and DWR's support have been instrumental in advancing and supporting IRWM throughout California.

Integrated Regional Water Management (IRWM) incorporates the physical, environmental, societal, economic, legal, and jurisdictional aspects of water management into regional solutions through collaborative stakeholder processes to promote sustainable water use.

For more information contact:

Strategic Planning Team
 (916) 651-9208
IRWM_StrategicPlan@water.ca.gov



Surface Storage Investigations

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation and Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	To complete the surface storage investigations recommended by CALFED, including: <ul style="list-style-type: none"> Shasta Lake Water Resources Investigation (SLWRI) North-of-the-Delta Offstream Storage Investigation (NODOS) In-Delta Storage Program (investigation is no longer active) Los Vaqueros Expansion Investigation (LVE) Upper San Joaquin River Basin Storage Investigation (USJRBSI) 			
Measurable Objectives	<ul style="list-style-type: none"> Status Reports and pre-feasibility documents NEPA (EIS) and CEQA (EIR) compliance documents Feasibility Study Reports Permits 			
Key Agency & Partner Interaction				
Lead Agencies / Partners Generally, Reclamation is the NEPA lead agency and DWR is the CEQA lead agency. For LVE, Contra Costa Water District is the CEQA lead agency. For SLWRI, there is not a CEQA lead agency.		Regulatory Agencies / Partners The investigations have established outreach with local, State, Tribal, and federal regulatory and permitting entities.		
Cooperating Agencies / Partners The investigations have developed both formal and informal relationships with cooperating agencies, including other federal, State, Tribal, and local entities.		Land Use Agencies / Partners The investigations have coordinated with local, State, Tribal, and federal land use entities, as well as land-owners.		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	The investigations explicitly intend to use additional storage to improve the flexibility of the existing CVP and SWP systems and their related water resources.			
<input checked="" type="checkbox"/> Increase Water Supply	An objective of additional storage is to improve water supply for agricultural, M&I, and refuge water users.			
<input checked="" type="checkbox"/> Improve Water Quality	An objective of additional storage is to improve water quality for water users and the environment.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	An objective of additional storage is to improve specific ecosystem functions to support species and the sustainability of the systems.			
<input checked="" type="checkbox"/> Improve Flood Management	An objective of additional storage is to support flood damage reduction.			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline								
Key External Milestone / Deliverable				Date (by Quarter / Year)				
SLWRI Preliminary Draft EIS and Feasibility Report				Q1 2012				
NODOS Draft EIS/EIR and Feasibility Report				Q3 2012				
NODOS Final EIS/EIR and Feasibility Report				Q3 2013				
SLWRI Draft EIS and Feasibility Report				TBD				
LVE Draft EIS/EIR and Feasibility Report				TBD				
USJRBSI Draft EIS/EIR and Feasibility Report				TBD				
Lead	Ajay Goyal		agoyal@water.ca.gov					
Website	http://www.water.ca.gov/storage/index.cfm							
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	CALFED Surface Storage Investigations Progress Report, November 2010, DWR Initial Alternative Information Reports for investigations Plan Formulation Reports for investigations						
	<input type="checkbox"/> Brochure(s)							
	<input checked="" type="checkbox"/> Fact Sheet(s)	Fact Sheets available for various investigations – see website						
	<input type="checkbox"/> Multimedia(s)							
External Communication & Engagement Approach (11/12 only)								
Public Comment Opportunities	On-going							
Public Meetings / Open Houses	On-going outreach							
Interactive Workshops								
Standing Workgroups	Various							
Other								
Internal Coordination (11/12 only)								
Support From Other IWM Topics	<ul style="list-style-type: none"> Climate Change Project Management Support 							
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Climate Change Public Benefits Evaluation Regional Partnerships 							
Budget & Funding (in 1,000s)				11/12	12/13	13/14	14/15	15/16
Forecasted Budget								
Expected Funding	<input type="checkbox"/> General Fund							
	<input type="checkbox"/> Bond (Prop 13)							
	<input type="checkbox"/> Bond (Prop 50)							
	<input type="checkbox"/> Bond (Prop 1E)							
	<input checked="" type="checkbox"/> Bond (Prop 84)							
	<input type="checkbox"/> Fees							
	<input type="checkbox"/> Reimbursable							
	<input type="checkbox"/> In-Kind Support							
	<input type="checkbox"/> Other							
TOTAL FUNDING								

CALFED SURFACE STORAGE INVESTIGATIONS

"... a new era in surface storage planning, where projects are conceived to support multiple objectives that combine ecosystem restoration and water quality improvements with more traditional purposes of water supply reliability, hydropower, and flood protection"

MARK COWIN
DIRECTOR, DEPARTMENT OF WATER RESOURCES
CALFED SURFACE STORAGE PROGRESS REPORT, 2010

DIVISION OF STATEWIDE INTEGRATED WATER MANAGEMENT
STATEWIDE INFRASTRUCTURE INVESTIGATIONS BRANCH
PROGRAM MANAGER - AJAY GOYAL

SURFACE STORAGE PROJECTS

NORTH-OF-THE-DELTA OFFSTREAM STORAGE

Flexible Generation
Sites Reservoir could provide flexible generation, which can quickly ramp up or down to shape mid or solar generation to meet electrical demands and allow for reliable operation of the grid.

Recreational Purposes
Sites Reservoir could provide opportunities for fishing, camping, boating, and boating.

Water Supply and Water Supply Reliability
The reliability of water supplies is improved by Sites Reservoir by the addition of storage to the CVP and SWP systems and the added flexibility for operating the systems.

M&I Water Quality Benefits
Sites Reservoir could improve water quality by reducing the average electrical conductivity (indication of salinity) and the concentrations of total dissolved solids, chlorides, and bromides at Delta export facilities.

Environmental Water Quality Improvements
Sites Reservoir could release water to the Sacramento River to improve Delta water quality for ecosystem functions.

Emergency Response
Sites Reservoir could provide emergency water supply or make releases to supplement flushing flows, as conditions warrant.

Ecosystem Improvements
The Sites Reservoir project would dedicate storage to improve water temperatures in existing reservoirs and flow and temperature conditions in the Sacramento River, its tributaries, and the Delta to support ecosystem restoration.

Flood Protection
Sites Reservoir could improve flood protection for the Sacramento River Basin by increasing flood control reservation space in existing reservoirs through the exchange of storage capacity at Sites Reservoir.

Note: Map not to scale.

- DWR and U.S. Bureau of Reclamation, with local water interests, are evaluating offstream storage in the northern Sacramento Valley.
- The investigation is evaluating alternatives of 1.27 MAF to 1.81 MAF of storage costing \$3.4-\$3.9 Billion.
- The investigation will release a Draft EIR/EIS and Feasibility Report to the public in Summer 2012.

IN-DELTA STORAGE

U.S. Bureau of Reclamation is leading the feasibility investigation of enlarging Shasta Lake, in consultation with DWR and local water interests. DWR's participation is limited by the Public Resources Code.

The investigation is evaluating a dam raise up to 18.5 feet (634 TAF) costing up to \$1.07 Billion.

Reclamation released a Preliminary Draft EIS and Feasibility Report in February 2012. A complete Draft EIS and Feasibility Report will be released later.

- DWR's participation in the In-Delta Storage Program was suspended in 2006 when state funding for the program ended.

SHASTA LAKE WATER RESOURCES

Hydropower Generation
Increasing the size of Shasta Dam and reservoir would result in the ability to increase hydropower generation at Shasta Dam generating facilities.

Recreational Purposes
The project includes features to maintain the existing recreation capacity at Shasta Lake and would provide for modernized recreation facilities.

Water Supply and Water Supply Reliability
The project could increase water supply reliability by increasing firm water supplies for multiple purposes.

Water Quality Improvements
Additional storage in Shasta reservoir could provide improved operational flexibility, which could contribute to improved Delta water quality conditions. Shasta Dam has the ability to provide increased releases, as well as high flow releases to reestablish Delta water quality.

Ecosystem Improvements
Raising Shasta Dam would increase the depth of the cold-water pool in Shasta Lake, resulting in an increase in seasonal cold-water volume. The project could increase the ability of Shasta Dam to make cold-water releases and regulate water temperatures and flows for anadromous fish in the upper Sacramento River, primarily in dry and critically dry years. The addition of spawning gravel and the restoration of riparian areas and the floodplain habitat in the upper Sacramento River are expected to improve the complexity of aquatic habitat and its suitability for spawning and rearing.

Flood Protection
An enlarged Shasta releases the need for some flood releases to meet Shasta Lake flood management rules, which could result in lower peak river flows that cause damage along the Sacramento River corridor.

Note: Map not to scale.

- U.S. Bureau of Reclamation is leading the feasibility investigation of enlarging Shasta Lake, in consultation with DWR and local water interests. DWR's participation is limited by the Public Resources Code.
- The investigation is evaluating a dam raise up to 18.5 feet (634 TAF) costing up to \$1.07 Billion.
- Reclamation released a Preliminary Draft EIS and Feasibility Report in February 2012. A complete Draft EIS and Feasibility Report will be released later.

LOS VAQUEROS EXPANSION

Ecosystem Improvements
The Los Vaqueros Expansion would increase environmental protection for SWP and CVP operations in the south Delta through the addition of environmental water storage and positive barrier fish screens. The additional storage would capture water supplies when less harmful for protected species. The fish screens would minimize or eliminate the effects of water supply diversions on the ecosystem.

Emergency Response
Additional storage and system connectivity provided by the Los Vaqueros Expansion would allow water deliveries to continue without interruption if an emergency caused an outage of Delta water supplies.

Water Supply and Water Supply Reliability
Expanded storage of the Los Vaqueros Reservoir would allow water supply deliveries from the Delta to be maintained that would otherwise face increased regulatory restriction, resulting in improved water supply reliability relative to current levels of restriction. The ecosystem protection provided by this project would increase the reliability of export operations by avoiding harm to protected species in the Delta.

Recreational Purposes
Recreational opportunities will be enhanced in the Los Vaqueros Reservoir watershed if the storage is expanded. Existing trails in the watershed would be preserved or replaced, and the expanded shoreline would allow increased fishing opportunities.

Note: Map not to scale.

- Contra Costa Water District, U.S. Bureau of Reclamation, and DWR have studied expansion of Los Vaqueros Reservoir.
- Construction of an initial expansion from 100 TAF to 160 TAF has begun.
- With additional funding, local, federal, and state partners may study an expansion of up to an additional 340 TAF.

UPPER SAN JOAQUIN RIVER BASIN STORAGE

Hydropower/Flexible Generation
Power features would have the flexibility to provide power, ancillary, and renewable integration benefits to the system.

Water Supply and Water Supply Reliability
Additional storage would capture available San Joaquin River flows for water deliveries and facilitate water exchanges with other south-of-Delta water users through operations integration.

Recreational Purposes
The new reservoir could improve recreation opportunities in the region, including boating and waterskiing.

Ecosystem Improvements
Habitat conditions in the San Joaquin River could be improved by managing cold water volumes and temperature of flow releases, and by releasing additional flows in critically dry years.

Environmental Water Quality Improvements
Stored water could be released to improve San Joaquin River water quality, and operations integration could enhance Delta and river ecosystems.

M & I Water Quality Benefits
The quality of water supplies for urban areas would improve through operations integration exchanges.

Flood Protection
Significant incidental flood management space in the reservoir would improve management of flood flows at Friant Dam.

Emergency Response
The reservoir's storage location south of the Delta and large storage capacity would provide both long-term and emergency water supply benefits for the State.

Note: Map not to scale.

Operations integration provides statewide benefits. Temperature Flat RW 274 Reservoir could facilitate additional south-of-Delta water deliveries through exchanges with other CVP and SWP supplies and integrating operations with San Luis Reservoir. San Luis Reservoir or Temperature Flat Reservoir could serve south-of-Delta demands while the other reservoir fills, depending on availability of excess water from the Delta and conveyance capacity. Operation integration exchanges could use available conveyance capacity to move water across the San Joaquin Valley. Opportunities also exist for integration with other north-of-Delta reservoirs.

- U.S. Bureau of Reclamation, DWR, and local water interests are studying storage projects in the Upper San Joaquin River watershed.
- The investigation has considered initial alternatives with up to 1.26 MAF of additional storage.

Water Planning Information Exchange

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Data Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Improve access to water resource information by: <ul style="list-style-type: none"> Developing an easy to use, web-based, graphical interface. Developing common language for sharing water resource information. Providing a way for organizations to exchange data for the California Water Plan. 			
Measurable Objectives	<ul style="list-style-type: none"> Develop and maintain a web application. Develop a common language for sharing water resources information. Number of data sets sharing information. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> SWAN DES CASGEM IRWM Planning Groups 		<ul style="list-style-type: none"> SWRCB DFG 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Water Agencies 		<ul style="list-style-type: none"> Public 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	<ul style="list-style-type: none"> Improve access to water resources information. Increases efficiency of staff at all levels of government. Promote integration of water resources analyses. 			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline																																																														
Key External Milestone / Deliverable	Date (by Quarter / Year)																																																													
Initiate contract to develop business requirements for Water Planning Information Exchange	Q2 2012																																																													
Finalize business requirements for Water Planning Information Exchange	Q4 2012																																																													
Initiate contract to develop application and link initial data sets	Q2 2013																																																													
Link additional data sets	Q1 2014 and beyond																																																													
Lead	Greg Smith		gregs@water.ca.gov																																																											
Website																																																														
Key Program Information Materials	<input type="checkbox"/> Report(s)																																																													
	<input type="checkbox"/> Brochure(s)																																																													
	<input checked="" type="checkbox"/> Fact Sheet(s)	Water Planning Information Exchange Issue Paper																																																												
	<input type="checkbox"/> Multimedia(s)																																																													
External Communication & Engagement Approach (11/12 only)																																																														
Public Comment Opportunities																																																														
Public Meetings / Open Houses	Presentations at IWM conference																																																													
Interactive Workshops																																																														
Standing Workgroups																																																														
Other	Promoting data exchange in workgroups (internal and external)																																																													
Internal Coordination (11/12 only)																																																														
Support From Other IWM Topics	<ul style="list-style-type: none"> California Water Plan 																																																													
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan CASGEM SWAN 																																																													
Budget & Funding (in 1,000s)																																																														
Forecasted Budget																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">11/12</th> <th style="width: 10%;">12/13</th> <th style="width: 10%;">13/14</th> <th style="width: 10%;">14/15</th> <th style="width: 10%;">15/16</th> </tr> </thead> <tbody> <tr> <td rowspan="10">Expected Funding</td> <td><input checked="" type="checkbox"/> General Fund</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 13)</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 50)</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 1E)</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Bond (Prop 84)</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Fees</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Reimbursable</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> In-Kind Support</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>TOTAL FUNDING</td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table>							11/12	12/13	13/14	14/15	15/16	Expected Funding	<input checked="" type="checkbox"/> General Fund					<input type="checkbox"/> Bond (Prop 13)					<input type="checkbox"/> Bond (Prop 50)					<input type="checkbox"/> Bond (Prop 1E)					<input checked="" type="checkbox"/> Bond (Prop 84)					<input type="checkbox"/> Fees					<input type="checkbox"/> Reimbursable					<input type="checkbox"/> In-Kind Support					<input type="checkbox"/> Other					TOTAL FUNDING				
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Water Planning Information Exchange

Division of Statewide Integrated Water Management

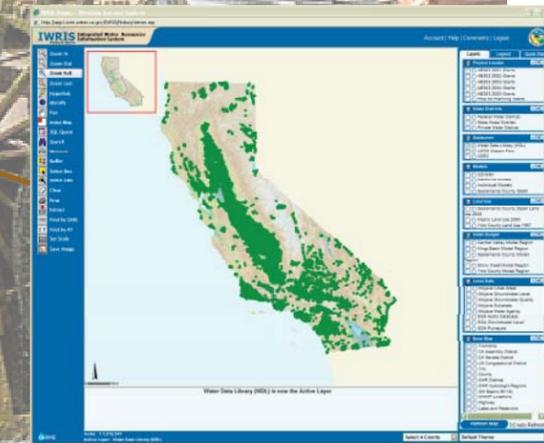
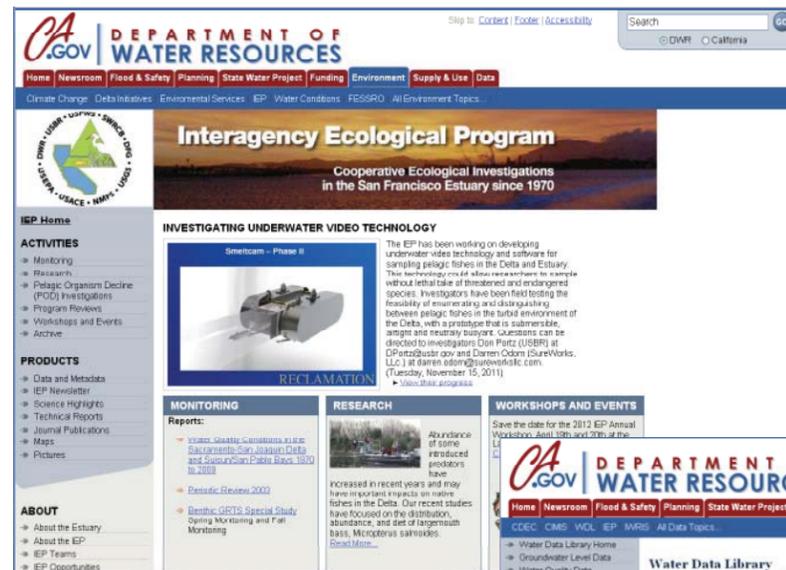
Greg Smith
916.653.6410
gregs@water.c.gov

Water Planning Information Exchange is a federated system for sharing water resource information, intended to change the status quo. A federated system is like a water wheel. At the end of each spoke, is an autonomous data set. At the hub is a system that links the spokes together.

Start with DWR data sets . . .

The spoke is a data set from an organization. The amount and type of information an organization chooses to share is voluntary. And, an organization does not have to change any of its procedures or standards to participate in Water Planning Information Exchange.

The hub is a portal to water resources information. Water Planning Information Exchange will use a web-based, geographic user interface for the portal. Access to water resources information will be easy. A person interested in water resources information would be able to select an area of California, select an organization, select some type of data of interest, or some combination. Water Planning Information Exchange would query the spokes, and return the information to the user in a standard format.



and add local and regional data in the future.

IWM Economic Assessments

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation & Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Benefit-Cost and Economic Impact Studies for Feasibility Studies and Environmental Documentation SWP Aqueduct Water Transfer Economic Criteria Compliance Benefit-Cost Studies for Flood Risk Management Programs and Projects Valuation of Ecosystem Services for Benefit-Cost Studies Urban and Agricultural Water Demand Forecasting Demographic Analysis and Forecasting Benefits of Urban and Agricultural Water Supply Reliability Development of Economic Incentive-Based Water Management Strategies Development of Economic Components of Grant Program PSP Packages and Evaluation of Submitted Applications Review of Economic Content of Documents Produced by Other Agencies (USBR, USACE, SWRCB, Delta Stewardship Council, Delta Protection Commission, etc.) Participation in DWR SBX7-2 and SBX7-7 Programs 			
Measurable Objectives	<ul style="list-style-type: none"> Meet Program Manager's Milestones and Deliverables 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USBR USACE 		<ul style="list-style-type: none"> SWRCB DFG 		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Participation in IWRM Grant Program and Preparation of CWPU Economic Incentives Water Management Strategy			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Participation in the DWR Water Transfers Program			
<input checked="" type="checkbox"/> Increase Water Supply	Participation in IWRM Grant and DWR Surface Storage Programs and Preparation of CWPU Economic Incentives Water Management Strategy			
<input checked="" type="checkbox"/> Improve Water Quality	Participation in IWRM Grant and DWR Surface Storage Programs and Preparation of CWPU Economic Incentives Water Management Strategy			
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Participation in IWRM Grant and FloodSAFE Programs			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Lead	Ray Hoagland	ray@water.ca.gov				
Website	http://www.water.ca.gov/economics/					
Key Program Information Materials	<input checked="" type="checkbox"/> WREM(s)	http://www.water.ca.gov/economics/downloads/Guidebook_June_08/WREM_No66-FINAL.pdf				
	<input checked="" type="checkbox"/> Report(s)	http://www.water.ca.gov/economics/downloads/Guidebook_June_08/EconGuidebook.pdf				
	<input type="checkbox"/> Brochure(s)					
	<input checked="" type="checkbox"/> Fact Sheet(s)	Economic Analysis Section program flyer				
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities						
Public Meetings / Open Houses	Water Plan public meetings					
Interactive Workshops	Grants Programs Workshops					
Standing Workgroups	Water Plan finance caucus					
Other						
Internal Coordination (11/12 only)						
Support From Other IWM Topics						
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Surface Storage Investigations IRWM Grant Programs FloodSAFE Programs BDCP (Review and Comment on EIR/EIS Documentation) Water Transfers 					
Budget & Funding (in 1,000s)		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input checked="" type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Other					
	TOTAL FUNDING					

IWM Economic Assessments

Lead: Rich Juricich (916) 651-9225 juricich@water.ca.gov

Division of Statewide Integrated Water Management
Economic Analysis Section
<http://www.water.ca.gov/economics/>

Section Vision:

Develop and maintain in-house expertise and staff levels to provide high quality, timely, cost-effective responses to meet DWR program managers' needs

Section Mission:

The Economic Analysis Section (EAS) provides technical assistance and policy guidance for economic, demographic, and mathematical analysis to improve the management of California's natural resources.

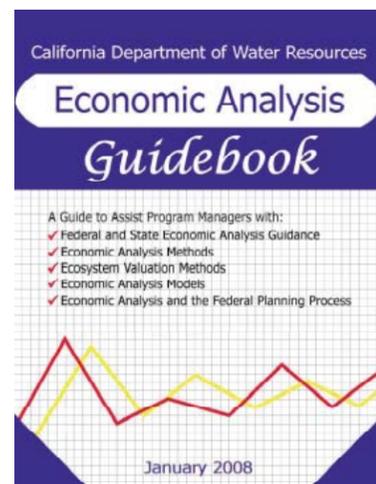
Section Long-Term Activities:

- Benefit-cost and cost allocation analyses for plan formulation and feasibility studies for proposed SWP facilities
- Socio-economic impact analyses for EIR/EIS documentation for proposed SWP facilities
- Statewide water resources planning analyses and economic incentives strategies for the California Water Plan Update
- Analyses of economic impacts of water transfer proposals
- Flood risk management cost-benefit analyses for FloodSAFE programs
- Review and comment on other agencies' reports and economic analyses
- Advice to management concerning Department policy on economic analysis criteria and methods
- Training for DWR personnel in basic economic concepts and methods
- Development of economics elements of PSP packages for grant programs, assistance for applicants, and review of returned applications

Some Examples of Section Contributions:

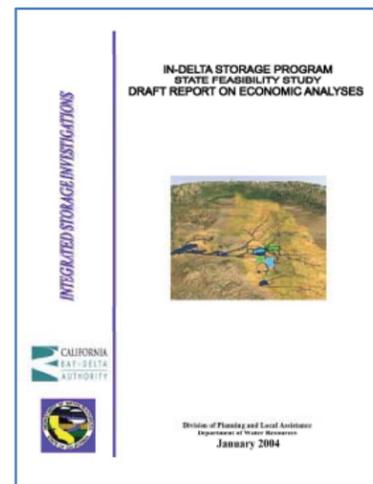
Economic Analysis Guidebook

- Make economic analysis more understandable to DWR managers.
- Identify emerging non-traditional methods of performing economic analysis, including ecosystem services valuation.
- Describe basic economic analysis concepts, methods, and tools used in water resource planning and when to use them.



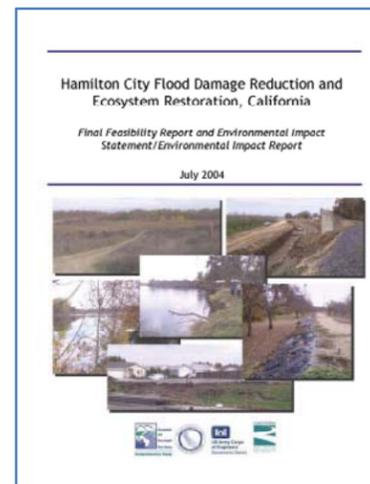
In-Delta Storage Project

Benefit-cost analysis based on urban and agricultural water supply, recreation, flood risk, and levee maintenance cost reduction benefits. Economic impact analysis of reduced crop production and levee maintenance and increased recreation on employment, income, and taxes.



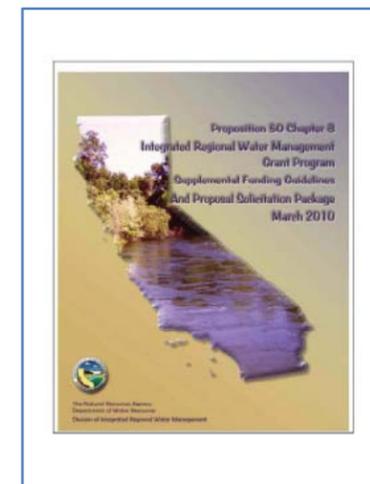
Hamilton City Flood Risk Management Project

In cooperation with the USACE, development of innovative use of environmental benefits in conjunction with flood risk reduction benefits for project justification purposes.



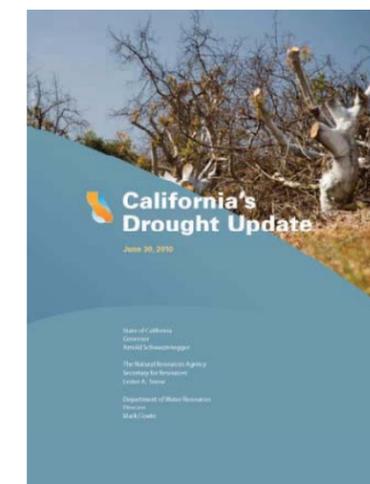
IRWM Grant Program

Assistance with development of the economic benefits portion of the PSP, participation in applicant workshops, telephone assistance to applicants, and review of the benefits section of returned applications for application ranking.



2010 Drought Report Updates

Information on local surface water and ground availability from land and water use scientists and groundwater geologists and SWP and CVP project delivery forecasts used to run agricultural crop production model and inter-industry impact model to forecast drought impacts on income and employment related to Central Valley agriculture.



Public Benefits Evaluation (Quantification of Public Benefits of Water Storage Projects)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation and Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Assist the California Water Commission in developing regulations to quantify public benefits of water storage projects. Develop proposal solicitation guidelines for awarding funds from the proposed water bond for water storage projects. 			
Measurable Objectives	<ul style="list-style-type: none"> Identify available economic tools and methods for quantification of public benefits. Draft Regulations and Guidelines by Fall 2012. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> DWR California Water Commission Department of Fish and Game State Water Resource Control Board 		<ul style="list-style-type: none"> California Water Commission Office of Administrative Law 		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Provides policy guidance, and direction related to quantification of public benefits for water storage projects, and award of bond funding for those projects.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Report on Economic Tools and Methods			Q1 2012				
DFG – List of priorities			Q1 2012				
SWRCB – List of priorities			Q1 2012				
Regulation - Initial Draft for CWC/public review			Q2 2012				
Guidelines - Initial Draft for CWC/public review			Q2 2012				
Regulation for public benefits.			Dependent on passing of Water Bond				
Lead	Ajay Goyal		agoyal@water.ca.gov				
Website	http://cwc.ca.gov/cwc/workshops.cfm						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Description and Screening of Potential Tools and Methods to Quantify Public Benefits of Water Storage Projects					
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses	Monthly Meetings of the California Water Commission						
Interactive Workshops	California Water Commission's – Storage Workshops, meetings with project team						
Standing Workgroups							
Other	Comments accepted via email, or letter to the California Water Commission						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> IWM Economic Assessments 						
Support To Other IWM Topics	<ul style="list-style-type: none"> Surface Storage Investigations 						
Budget & Funding (in 1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
TOTAL FUNDING							

QUANTIFICATION OF PUBLIC BENEFITS OF WATER STORAGE PROJECTS

DIVISION OF STATEWIDE INTEGRATED WATER MANAGEMENT
STATEWIDE INFRASTRUCTURE INVESTIGATIONS BRANCH
PROGRAM MANAGER - AJAY GOYAL

Objectives/Goals

- Assist the Commission in:
- Identifying available tools and methods for quantification of public benefits
 - Developing regulations for quantification and management of public benefits
 - Developing guidelines for evaluation of request for funding

Funding for Water Storage Projects

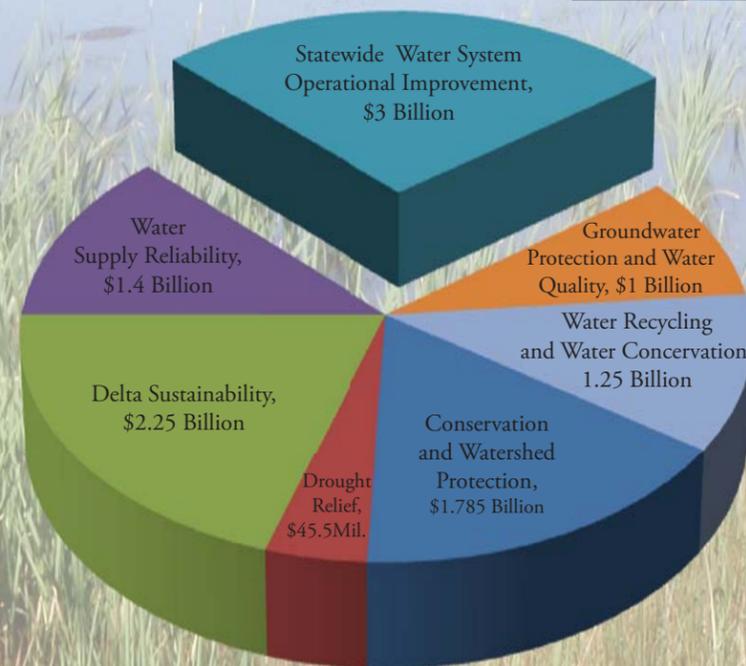
SBx7 02: The Water Bond

- \$3 billion for public benefits associated with water storage projects that improve the operation of the state water system, are cost-effective, and provide a net improvement in ecosystem and water quality conditions
- Funds awarded through a competitive process based on expected returns on public investment

ELIGIBLE PROJECTS

1. CALFED SURFACE STORAGE
2. GROUNDWATER STORAGE AND GROUNDWATER PREVENTION OR REMEDIATION PROJECTS
3. CONJUNCTIVE USE AND RESERVOIR REOPERATIONS
4. LOCAL AND REGIONAL SURFACE STORAGE

Public Review	Identify economic tools and methods
March 2012	DFG - List of Priorities SWRCB - List of Priorities
August 2012	Regulation: ▶ Initial Draft for CWC/public review Guidelines: ▶ Initial Draft for CWC/public review
Dec 2012	CWC to adopt by regulation
Jan 2018	Eligible Projects must have: ▶ Complete feasibility studies ▶ Draft EIR/EIS available for public review ▶ Finding by Commission that project is feasible ▶ Cost share commitments for 75% of non-public share



PUBLIC BENEFIT CATEGORIES TO BE FUNDED BY WATER BOND

1. ECOSYSTEM IMPROVEMENTS



2. WATER QUALITY



5. RECREATIONAL



3. FLOOD CONTROL



4. EMERGENCY RESPONSE



Other Provisions

- 50% Cap on State Share
- Ecosystem benefits must account for 50 percent of public benefits
- Projects must benefit Bay-Delta watershed
- Funds cannot be used to pay for:
 - Mitigation or for meeting existing environmental commitment
 - Delta conveyance facilities

Water Recycling and Desalination

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Water Use Efficiency/Drought Planning			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	To provide technical assistance on water recycling and desalination and administer funding for desalination projects, including: <ul style="list-style-type: none"> Draft resource management strategies for Calif Water Plan Provide technical support to Water Use Efficiency Branch and others Provide technical information to public Administer Prop 50 grants for desalination 			
Measurable Objectives	<ul style="list-style-type: none"> Draft water recycling and desalination strategies for Calif Water Plan Develop current status and future potential for water recycling and desalination Issue new PSP for Prop 50 grants Review and approve reports, invoices, contracts for Prop 50 grants 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Local water/wastewater agencies Academic and research institutions 		<ul style="list-style-type: none"> State Water Resources Control Board California Department of Public Health 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> WaterReuse Association and Foundation U.S. Bureau of Reclamation 				
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Augments water supply by reuse of water and use of saline waters			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Promotes reuse of water and use of saline waters			
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Public draft RMS for water recycling	Q2 2012					
Public draft RMS for desalination	Q2 2012					
Develop targets for recycling, desalination, stormwater use	Q3 2012					
Issue PSP for Prop 50 desalination grants	Q4 2012					
Adopt Prop 50 desalination grants list	Q2 2013					
Begin survey of recycling & desalination projects	Q1 2013					
Revise Bulletin 189, Water Recycling	Q2 2013					
Lead	Richard Mills	mills@water.ca.gov				
Website	http://www.water.ca.gov/recycling/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	http://www.water.ca.gov/recycling/Publications/				
	<input type="checkbox"/> Brochure(s)					
	<input type="checkbox"/> Fact Sheet(s)					
	<input type="checkbox"/> Multimedia(s)					
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Calif Water Plan RMSs, Prop 50 PSP draft and project list, draft state targets					
Public Meetings / Open Houses						
Interactive Workshops						
Standing Workgroups						
Other	Presentations at conferences, CPUC workshop on recycling					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Land & Water Use Data Water Use Efficiency IRWM Coordination Bond Management System 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Conservation Strategy Water Use Efficiency Bond Accountability California Water Plan Climate Change 					
Budget & Funding (in 1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input checked="" type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
	TOTAL FUNDING					

Water Recycling and Desalination

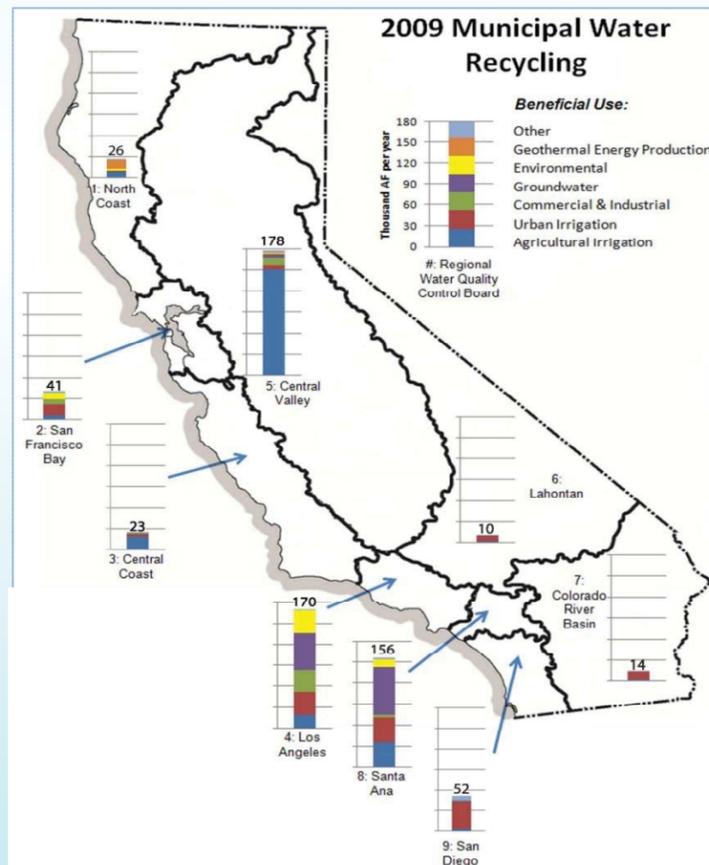
Division of Statewide Integrated Water Management
 Water Use and Efficiency Branch
 Water Recycling and Desalination

Richard Mills
 Nancy King
 Toni Pezzetti
 Michael Ross

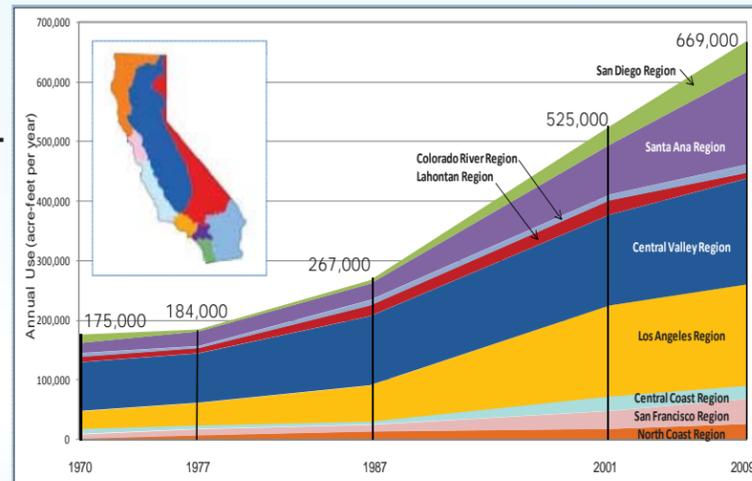
Further the safe and beneficial use of recycled and desalinated waters and advance environmentally and economically feasible recycling and desalination projects that result in drought proofing and diversifying the State's water resources portfolio.

2009 Recycled Water Survey

In coordination with the State Water Resources Control Board. Completed 2012.



Recycled water uses vary throughout the state.



Statewide, recycled water use is increasing, but we can do more . . .

Challenges to Increasing Recycled Water use:

- State funding for conveyance infrastructure expansion needed.
- Funding to support on-site industrial and commercial facility modifications to convert to recycled water use needed.

2002 Proposition 50 Desalination Grants

\$50 million in funding over two funding cycles.

44 projects.

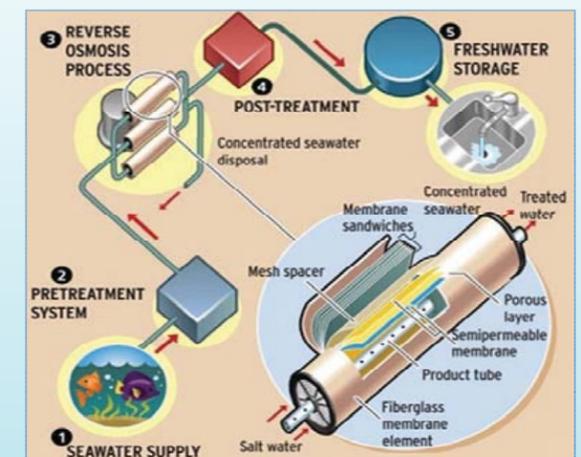
- 6 construction projects,
- 13 research and development projects,
- 14 pilot and demonstration projects,
- 11 feasibility studies.



Reverse Osmosis elements.

2012 Prop 50 Grants

Third cycle of over \$4.5 million funding for projects. Projects to be solicited and awarded.



East Bay Municipal Utility District.

Additional State support of recycled water and desalination development to meet future water demands.

Statewide Data Program (Water Quality and Quantity)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation & Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Statewide hydrologic data collection, data management and publication.			
Measurable Objectives	<ul style="list-style-type: none"> Collect and publish surface water, groundwater and water quality data in order to make well informed decisions about managing California's water resources. Maintain 126 surface water stage sites. Maintain 52 surface water flow sites. Monitor 3,600 groundwater sites with period measurements, and 412 groundwater sites continuous measurements. Maintain data for over 43,000 groundwater wells. Process 12,000 – 20,000 well completion reports per year. Maintain 89 water quality sites. Increase the use of Water Data Library beyond 23 hits per day. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> DWR USGS USBR Local cooperators Counties 		<ul style="list-style-type: none"> State Water Resources Control Board and Regional Boards 		
Operating Agencies / Partners		Land Use Agencies / Partners		
		<ul style="list-style-type: none"> Public 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	<ul style="list-style-type: none"> Basic hydrologic data collection Support California Water Plan, Integrated Regional Water Management and other programs 			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Continue to collect and publish timely data in Water Data Library			Continual				
Consolidate Hydstra			Q2 2012				
Implement Climate Module in Water Data Library			Q3 2012				
Collect and calculate depth-duration-frequency from community climate sites			Q1 2013				
Migrate wells from Water Data Library to CASGEM			Q2 2012				
Develop well completion report web application			Q3 2014 (or after)				
Lead	Greg Smith		gregs@water.ca.gov				
Website	http://www.water.ca.gov/waterdatalibrary/index.cfm						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	(see website)					
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics			<ul style="list-style-type: none"> California Water Plan 				
Support To Other IWM Topics			<ul style="list-style-type: none"> California Water Plan CASGEM Integrated Regional Water Management Division of Flood Management Climate Change 				
Budget & Funding (in 1,000s)							
			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input checked="" type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input checked="" type="checkbox"/> Other (mainly CWRD)						
TOTAL FUNDING							

Statewide Data Program

Division of Integrated Regional Water Management and Division of Statewide Integrated Water Management

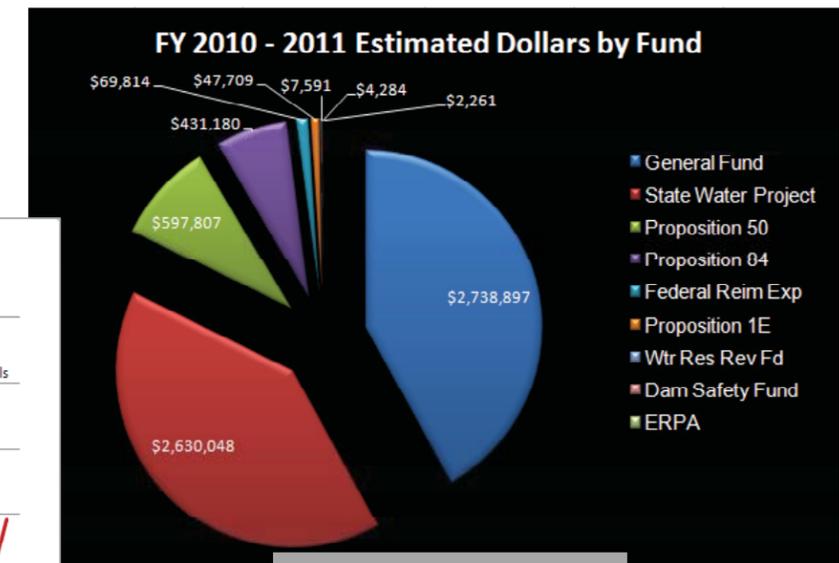
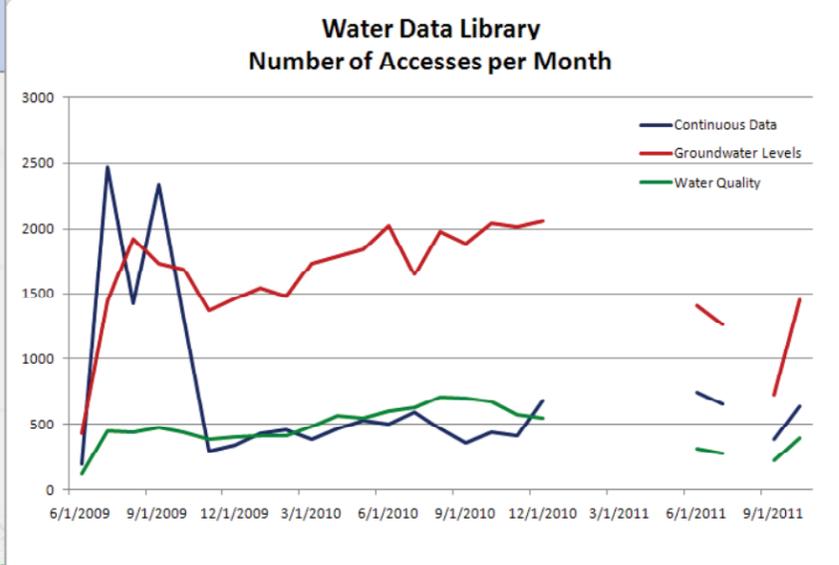
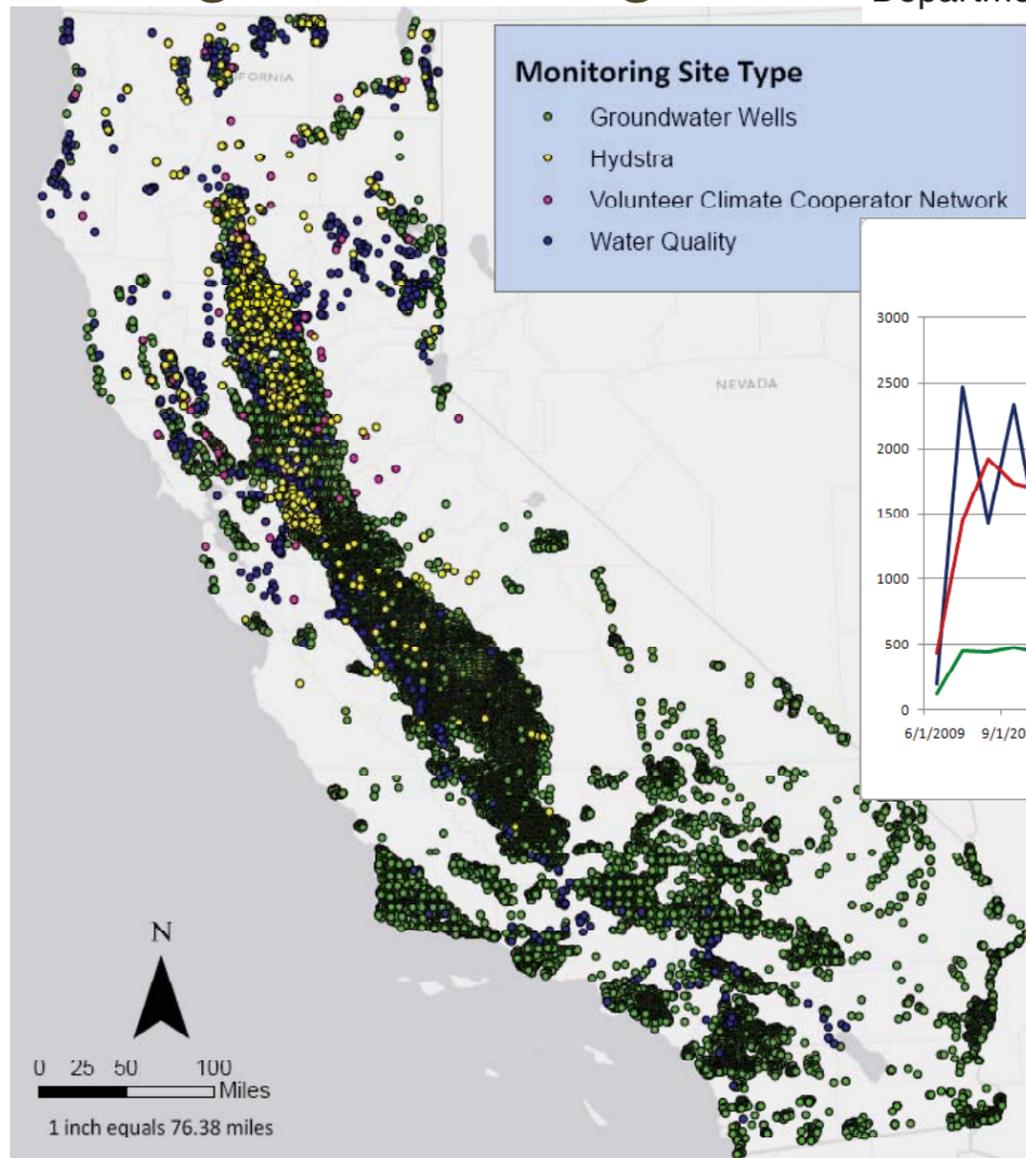
Greg Smith
916.653.6410
gregs@water.c.agov

Five Offices
Six Programs
Committed Professionals

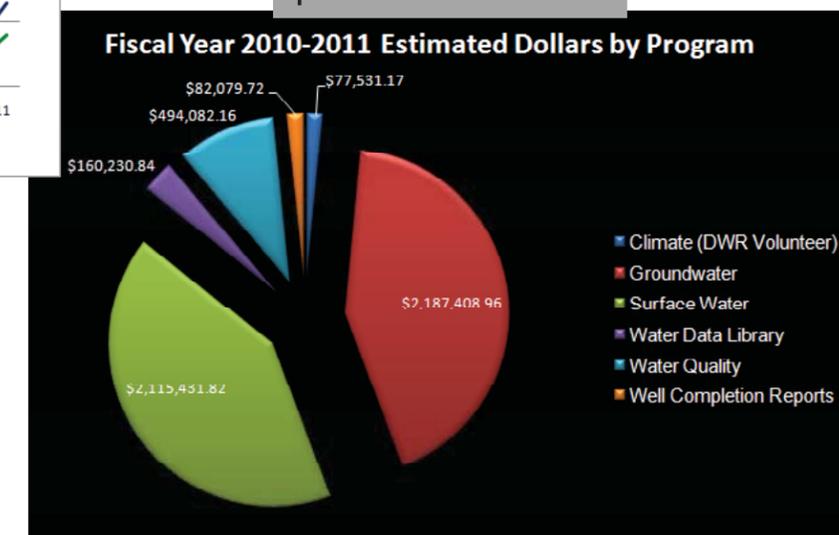
<http://www.water.ca.gov/waterdatalibrary>

The Department's mission is to manage the water resources of California in cooperation with other agencies to benefit the State's people, and to protect, restore, and enhance the natural and human environments. In addition, DWR has a public trust responsibility and mission to protect and restore resources dependent on water. This Statewide Data Program is responsible for collecting surface water data, groundwater data, water quality data, volunteer climate data, and well completion reports. The Statewide Data Program is also responsible for managing and publishing this data to support Departmental programs which fulfill these goals.

Program Monitoring Sites



\$6.5 Million



Water Use Efficiency

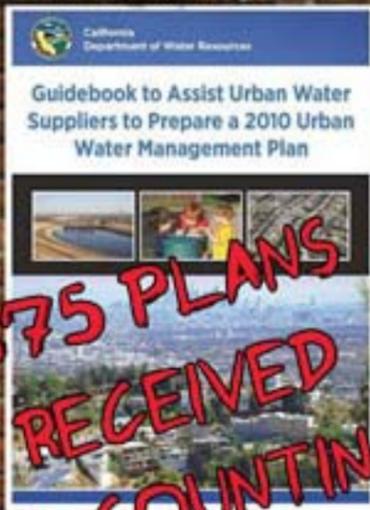
Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Water Use Efficiency/Drought Planning			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	Support, encourage and assist the statewide implementation of water conservation and efficiency measures to reduce the demand for water and increase productivity. Specific activities include: <ul style="list-style-type: none"> Urban and Agricultural Water Management Plans. Implementation of regulations, ordinances and guidelines. Provide data and technical information to water suppliers and public. 			
Measurable Objectives	<ul style="list-style-type: none"> Submittal and review of urban and agricultural water management plans. Implementation of SBx7-7. Development of written materials, workshops and presentations on specific issues and technologies. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Agricultural and Urban Water Management Councils USBR National Resources Conservation Service 		<ul style="list-style-type: none"> State Water Resources Control Board Department of Public Health 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Local and regional water districts and suppliers 				
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Primary program function			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Improvements in pipe and canal infrastructure to decrease water loss. In some cases, the water saved from the implementation of water conservation can be transferred.			
<input type="checkbox"/> Increase Water Supply				
<input checked="" type="checkbox"/> Improve Water Quality	Water use efficiency measures can result in improvements in water quality.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Water use efficiency is often the most cost effective means of improving water supply reliability.			
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Regional coordination of water use efficiency can lead to cooperation between water suppliers.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable	Date (by Quarter / Year)					
Urban Water Management Plan Legislative Report	Q1 2012					
Agricultural Water Management Plan Guidebook	Q1 2012					
Urban and Agricultural Resource Management Strategies for California Water Plan	Q1 2012					
Report to the Legislature on the Quantification of Agricultural Water Use Efficiency	Q1 2012					
Commercial, Industrial and Institutional Legislative Report	Q2 2012					
Office of Administrative Law Approval of the Agricultural Water Measurement Regulation	Q2 2012					
Lead	Manucher Alemi	malemi@water.ca.gov				
Website	http://www.water.ca.gov/wateruseefficiency/					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Urban Water Management Plan Guidebook Methodologies for Calculating Baseline and Compliance Year Water Use Model Water Efficient Water Landscape Ordinance				
	<input checked="" type="checkbox"/> Brochure(s)	http://www.water.ca.gov/wateruseefficiency/publications/				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Comment period provided for Draft Ag Water Management Plan Guidebook, CII Task Force Legislative Report, Ag Water Measurement Regulation, Quantification of Ag Water Use Efficiency legislative Report					
Public Meetings / Open Houses	CA Water Plan workshops on Urban and Ag Water Use Efficiency Strategies					
Standing Workgroups	Urban Stakeholder Committee, Agricultural Stakeholder Committee, Commercial, Industrial and Institutional Taskforce, Independent Technical Panel to Update Urban Best Management Practices					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Water Use Efficiency Grants IRWM Planning & Implementation Grants Regional Coordination CIMIS 					
Support To Other IWM Topics	<ul style="list-style-type: none"> California Water Plan Land & Water Use Data IRWM Planning & Implementation Grants 					
Budget & Funding (in 1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input checked="" type="checkbox"/> Other					
	TOTAL FUNDING					

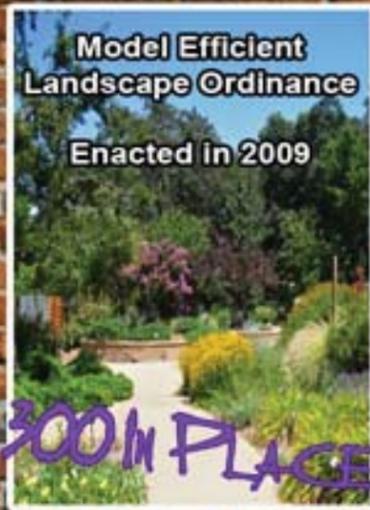
Water Use Efficiency

Increasing Water Supply Reliability and Productivity Through Better Water Management Practices

URBAN



375 PLANS RECEIVED & COUNTING

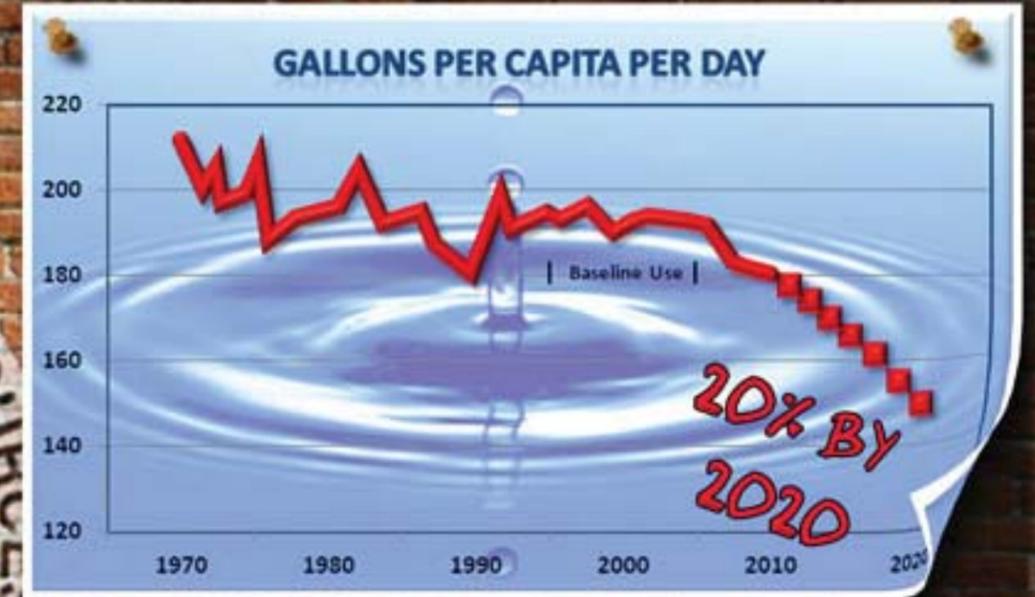


300 IN PLACE

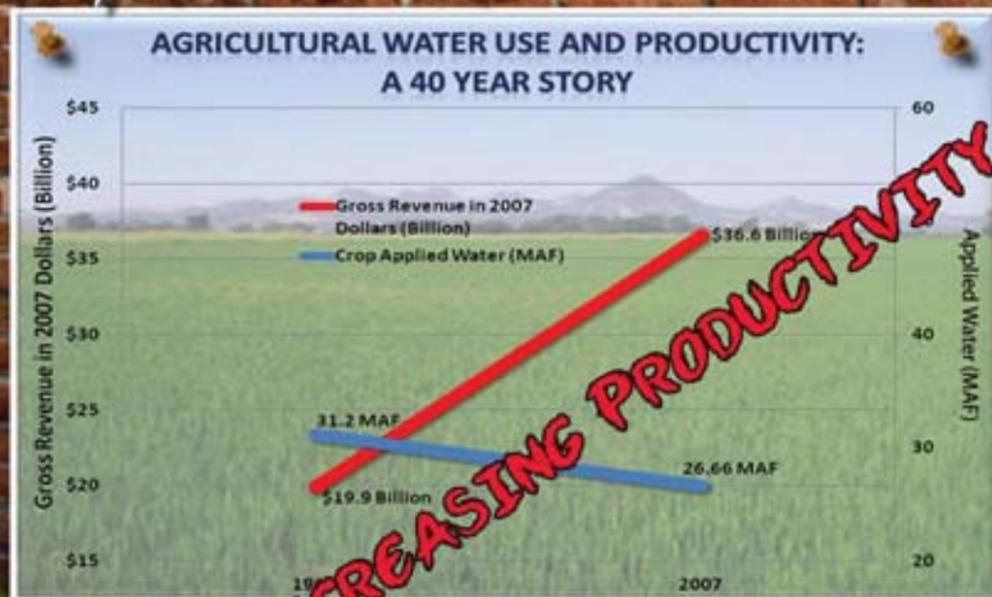
SBX 7-7 Implementation

BUILDING CONSENSUS

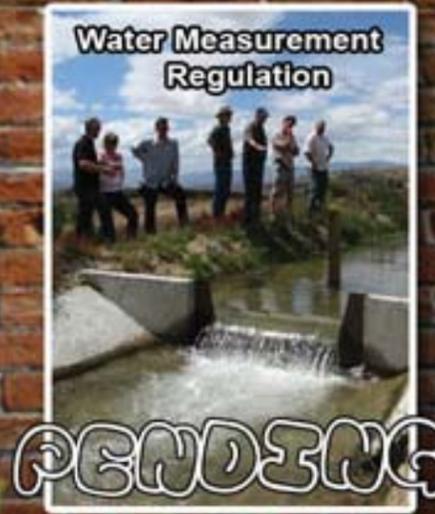
- Methodologies
- Method 4
- Process Water Regulation
- C II Task Force
- Ag Water Regulation
- Quantification of Ag Water Use Efficiency
- Updating EWMPS
- Standardized Form



AGRICULTURE



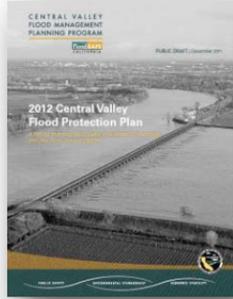
INCREASING PRODUCTIVITY



Central Valley Flood Protection Plan

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Management Planning and Conservation			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<p>To develop a systemwide plan to achieve flood risk reduction in the Central Valley through a combination of local, state, and federal projects that:</p> <ul style="list-style-type: none"> Estimates the needed investment for the next 20-30 years; Describes necessary state policies and programs; Illustrates the benefits associated with the new investments, policies, and programs; Accepts state leadership in the development of new flood system improvements that have system-wide benefits, such as bypasses. 			
Measurable Objectives	<ul style="list-style-type: none"> Engage stakeholder community to help develop approaches through variety of venues including workshops and 1:1 meetings; Calculate local and systemwide reductions in flood risk using systemwide model. Calculate the cost associated with proposed flood improvements; Develop new policies to assist local, state, and federal implementation of plan recommendations; Estimate the time it will take to achieve benefits based on proposed improvements. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USACE 5 Central Valley Urban Flood Control Agencies 		<ul style="list-style-type: none"> CVFPB CA Department of Fish and Game NOAA Fisheries 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> 100s Central Valley LMAs (RDs, LDs, etc.) National Weather Service (NWS) 		<ul style="list-style-type: none"> Central Valley cities and communities Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Changes to floodwater conveyance (stage, flow, timing) within the flood management system			
<input checked="" type="checkbox"/> Increase Water Supply	More frequent activation of floodplains may lead to increases in groundwater recharge			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Promotes multi-benefit projects through Conservation Framework			
<input checked="" type="checkbox"/> Improve Flood Management	Build infrastructure improvements, improve system resiliency and adaptability, coordinate reservoir operations, better utilize floodplains			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing policies, institutions, revenue generation, etc. related to flood risk coordination protocols, financial frameworks, adaptive flood management			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Public Draft 2012 CVFPP			Q1 2012				
Public Draft Programmatic EIR			Q2 2012				
Living With Risk, History Document			Q3 2012				
CVFPB Adoption of CVFPP			Q3 2012				
Sacramento and San Joaquin Basin-wide Feasibility Studies			Q3 2013				
Public Draft 2017 CVFPP			Q1 2017				
Central Valley Integrated Flood Management Study (USACE)			Q3 2017				
Lead	Jeremy Arrich		arrich@water.ca.gov				
Website	www.water.ca.gov/cvfmp						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	CVFPP, SPFC Descriptive Document, FCSSR					
	<input checked="" type="checkbox"/> Brochure(s)	Flood Risk Reduction in the Central Valley					
	<input checked="" type="checkbox"/> Fact Sheet(s)	CVFPP, CVFPP: Organization, CVFPP: SSIA Benefits Highlights					
	<input checked="" type="checkbox"/> Multimedia(s)	CVFPP Slideshow (4 min.)					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	Comments submitted to the CVFPB; CVFPB directions to DWR						
Public Meetings / Open Houses	Presentations to the CVFPB						
Interactive Workshops							
Standing Workgroups							
Other	Presentations/briefings to local jurisdictions, interest-based organizations, Native American Tribes, legislature, and other interested parties						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> Conservation Strategy Floodplain Evaluation and Delineation Flood Project Inspections and Vulnerability Flood Risk Awareness Flood O&M System Performance Assessments 						
Support To Other IWM Topics	<ul style="list-style-type: none"> USACE Coordinated Projects Regional Flood Plans Area Flood Planning Floodplain Management 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
TOTAL FUNDING							



Modernization of the State Plan of Flood Control

Central Valley Flood Protection Plan

State of California (State) law, enacted through the Central Valley Flood Protection Act of 2008 and codified in Sections 9600 through 9625 of the California Water Code, requires the California Department of Water Resources to prepare the Central Valley Flood Protection Plan (CVFPP). The CVFPP proposes a State Systemwide Investment Approach for sustainable, integrated flood management in areas currently protected by facilities of the State Plan of Flood Control.

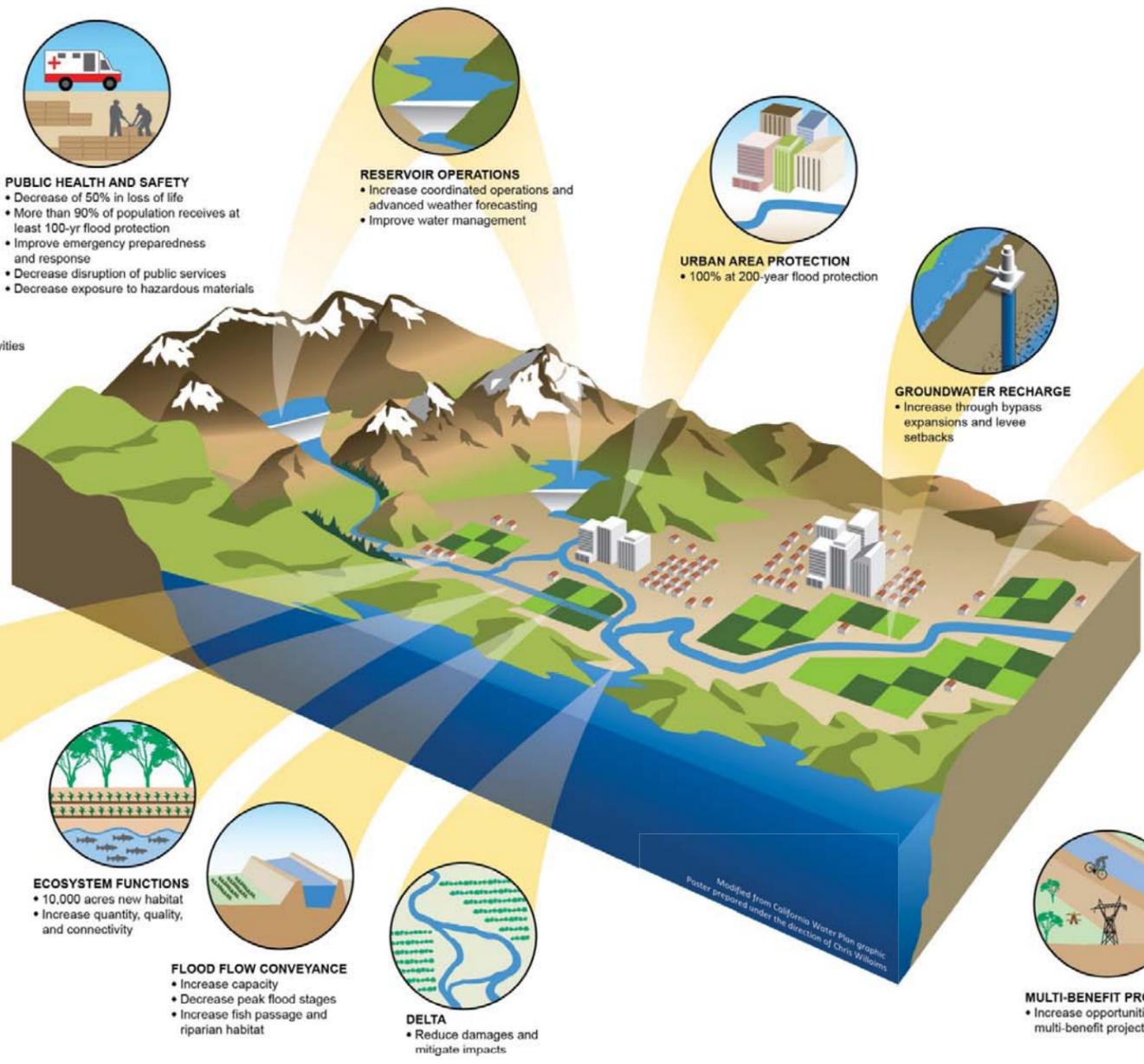
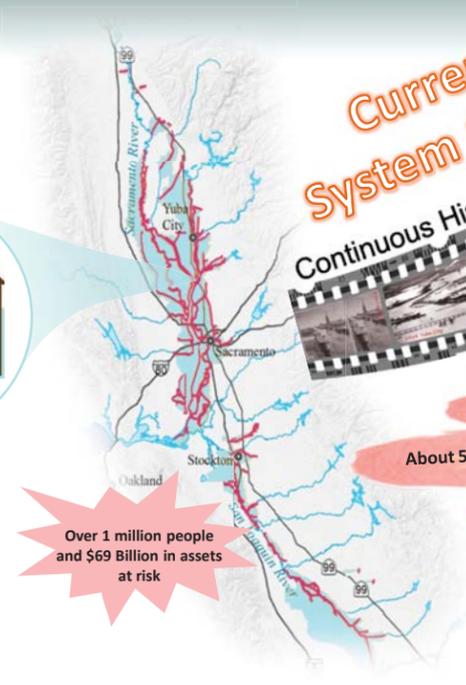
Many areas could have flood depths of more than 20 feet

Over 1 million people and \$69 Billion in assets at risk

Current System Status

Continuous History of Flooding in Central Valley

- About 50% of the 1,016 miles of channels have inadequate capacity
- About 60% of the 1,230 miles of rural levees have high potential for failure
- About 50% of the 300 miles of urban levees do not meet current standards
- Many facilities are old and need rehabilitation or replacement



PUBLIC HEALTH AND SAFETY

- Decrease of 50% in loss of life
- More than 90% of population receives at least 100-yr flood protection
- Improve emergency preparedness and response
- Decrease disruption of public services
- Decrease exposure to hazardous materials

RESERVOIR OPERATIONS

- Increase coordinated operations and advanced weather forecasting
- Improve water management

URBAN AREA PROTECTION

- 100% at 200-year flood protection

GROUNDWATER RECHARGE

- Increase through bypass expansions and levee setbacks

SMALL COMMUNITY PROTECTION

- 90% of residents receive at least 100-year flood protection

SYSTEM RESILIENCY

- Increase ability to manage extreme events and climate change effects

MULTI-BENEFIT PROJECTS

- Increase opportunities for multi-benefit projects

EMPLOYMENT OPPORTUNITIES

- Increase of \$900M construction activities
- Increase of 6,500 jobs/annually

AVOIDED ECONOMIC EFFECTS

- Decrease of 70% in expected annual damages
- Reduction of \$100M in business losses

RURAL-AGRICULTURAL AREA PROTECTION

- Decrease flood risk
- Increase of 25,000 acres agricultural conservation easements
- Increase agricultural economic stability

ECOSYSTEM FUNCTIONS

- 10,000 acres new habitat
- Increase quantity, quality, and connectivity

FLOOD FLOW CONVEYANCE

- Increase capacity
- Decrease peak flood stages
- Increase fish passage and riparian habitat

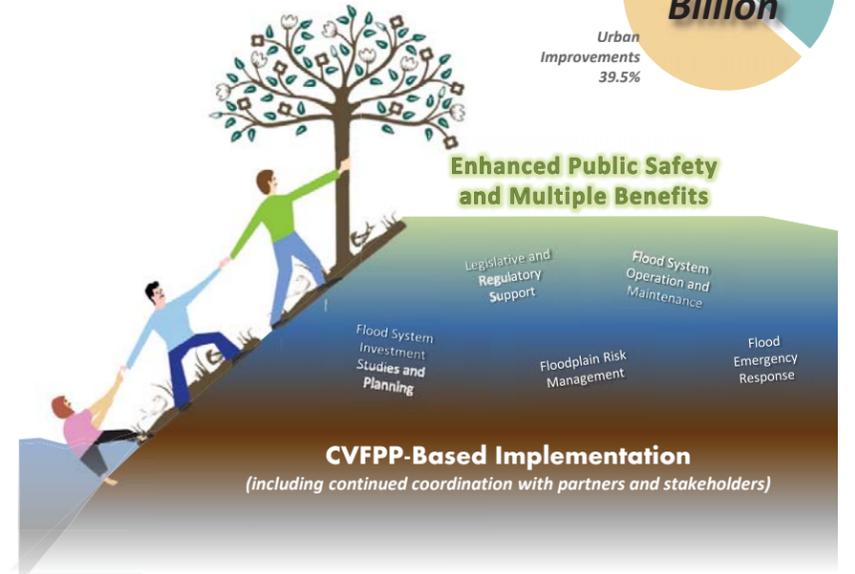
DELTA

- Reduce damages and mitigate impacts

25-Year Plan-Based Implementation with 5-year Updates



Enhanced Public Safety and Multiple Benefits



Jeremy Arrich | Division of Flood Management | Central Valley Flood Planning Office

Floodplain Evaluation and Delineation

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation and Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To develop and utilize topography, hydrologic and hydraulic models, and floodplain mapping within the state to:</p> <ul style="list-style-type: none"> Identify areas at risk of flooding and flood depths associated with the State Plan of Flood Control (SPFC) and other areas of the state; Develop water surface profiles for the riverine systems of the SPFC and other areas of the state for use by local, state and federal planning efforts and studies; Support mapping efforts by FEMA, planning studies by US Army Corps of Engineers (USACE), and hydrology and hydraulics related studies within DWR; and Support implementation of urban level of protection (ULOP) 200-year requirements by local entities. 			
Measurable Objectives	<ul style="list-style-type: none"> Finalize and make available for distribution the Central Valley Floodplain Evaluation and Delineation (CVFED) (and other studies) LiDAR, Bathymetry and Terrestrial survey data Develop combined hydraulic models of riverine and overland flows for CVFED Complete and submit to the CVFPB results of the CVFED program; and Obtain and Complete FEMA Mapping Activity Statements projects. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USACE, FEMA, Local Levee Districts 		<ul style="list-style-type: none"> CVFPB 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> FEMA, USACE, NOAA, OPC 		<ul style="list-style-type: none"> Local cities and communities 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Through use of H/H modeling to identify river areas that need improvement and assist in necessary studies to permit improvements.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Establish DWR floodplain development criteria, use of updated hydraulic models for emergency response (ER) support			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input checked="" type="checkbox"/> Personnel Development	Utilization of contractors to advance internal staff expertise in floodplain development to establish FRAMO as DWR H/H resource			

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Finalize and Distribute Final Post-Processed CVFED Topography			Q1 2012				
Completion of CVFED Hydraulic Models			Q3 2012				
Final CVFED Floodplain Delineations			Q1 2013				
Lead	David J. W. Wheeldon		Wheeldon@water.ca.gov				
Website	http://www.water.ca.gov/floodmgmt/lraimo/fmb						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	ULDC, FCSSR, CVFPP, SPFC Descriptive Document					
	<input checked="" type="checkbox"/> Brochure(s)	DWR Functional Area Brochures					
	<input checked="" type="checkbox"/> Fact Sheet(s)	CVFED Project 1 – Topography, CVFED Project 2 – Hydraulic Modeling, CVFED Project 3 – Floodplain Delineation					
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	Comments submitted from CVFPB presentations, FEMA discovery process						
Public Meetings / Open Houses	Annual report to the CVFPB on status and schedule, FEMA public meetings						
Interactive Workshops							
Standing Workgroups	Development of Levee Criteria Workgroup, Advice and Consultation Team						
Other	FAXCT Participation						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> USACE Coordinated Projects Regional Coordination Central Valley Flood Protection Plan California Water Plan 						
Support To Other IWM Topics	<ul style="list-style-type: none"> Statewide, Area, Regional Flood Management Planning USACE Coordinated Projects Early Implementation Program (EIP) Projects Flood ER San Joaquin River Restoration CVFPP System Feasibility Studies Floodplain Management 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input checked="" type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input checked="" type="checkbox"/> Other						
TOTAL FUNDING							

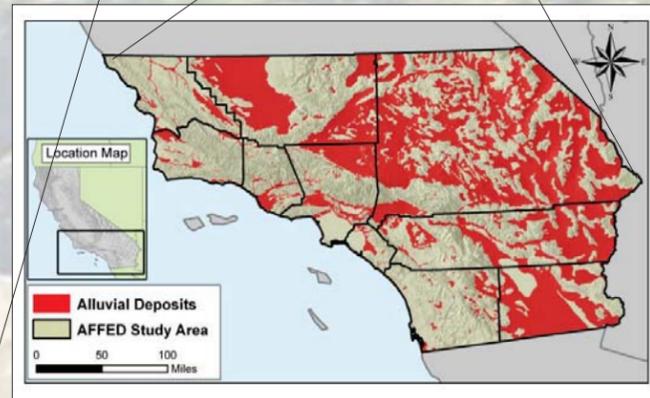
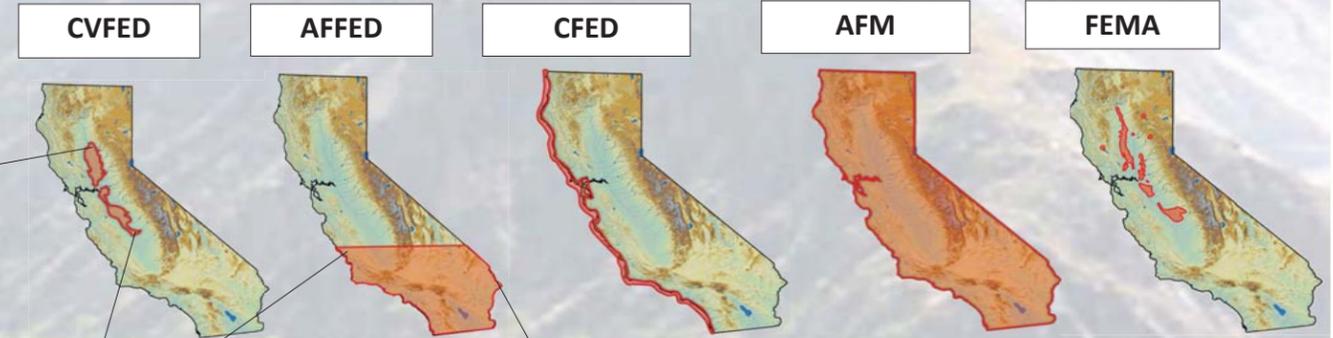
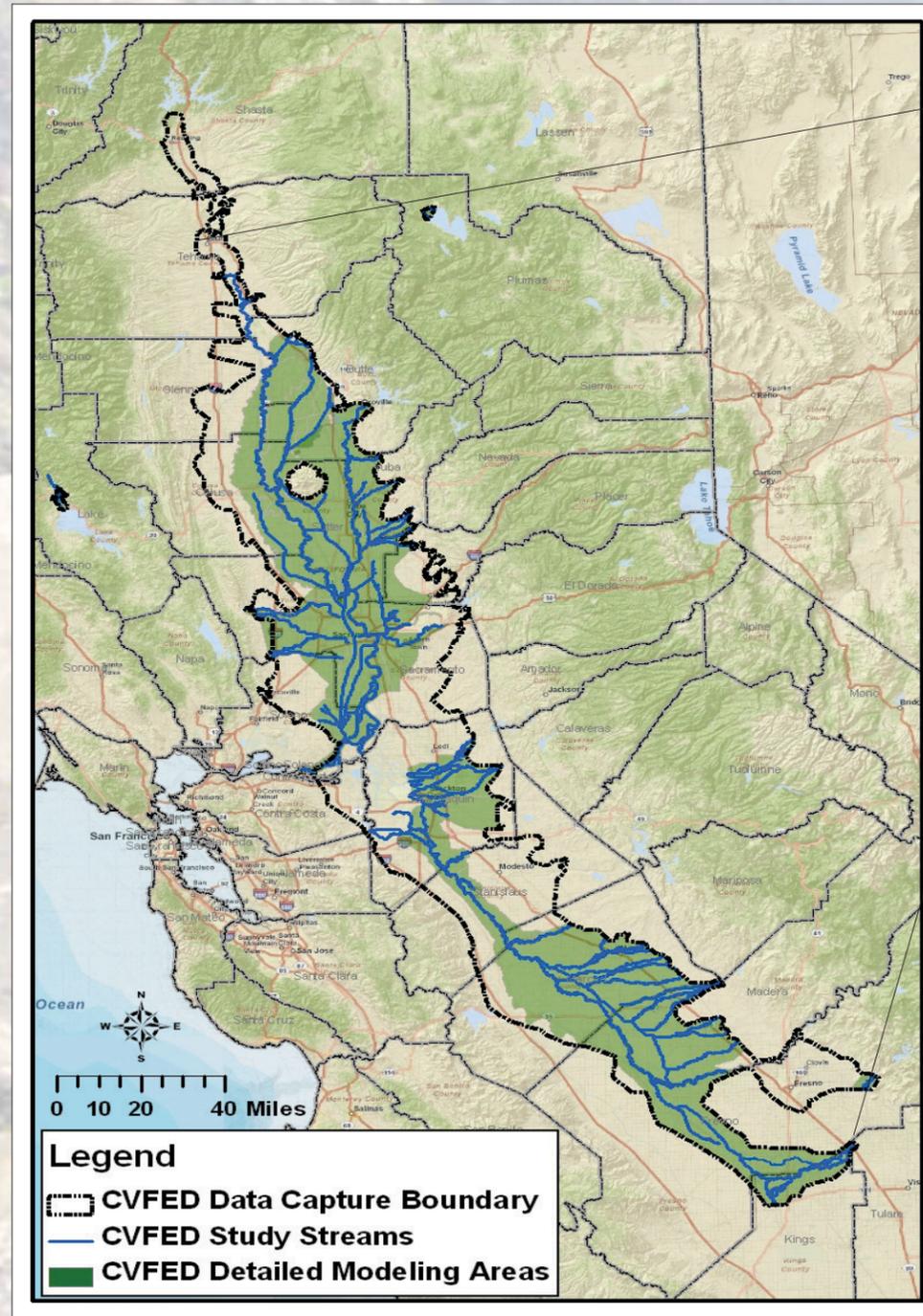
FLOODPLAIN EVALUATION AND DELINEATION

(Hydraulic Performance Evaluation)

Integrated Floodplain Delineation Programs



- Central Valley Flood Protection Plan
- Central Valley Flood Protection Board
- Statewide Integrated Flood Management Plan
- Integrated Water Management Plan
- Levee Maintaining Agencies
- Cities / Counties
- Federal Emergency Management Agency
- US Army Corps of Engineers
- California Ocean Protection Council
- California Geologic Survey
- US Bureau of Reclamation
- DWR-Flood Projects Office
- DWR-Flood Maintenance Office



AFFED
Alluvial Fan Floodplain Evaluation and Delineation Program

Preliminary flood hazard maps for alluvial fan areas

Preliminary high velocity hazard maps for alluvial fan areas

CVFED
Central Valley Floodplain Evaluation and Delineation Program

Topography Acquisition Project: pre-processed LiDAR (7,800 square miles) and digital aerial photography (9,000 square miles); final processed LiDAR (5,800 square miles) and bathymetry and surveyed cross-section data (5,500 sections) available to the public agencies

CVFED Hydraulic Evaluation Project: developed approximately 1,800 miles of riverine hydraulic models and about 6,100 square miles of overland hydraulic models

CVFED Floodplain Delineation Project: provide floodplains for the 100-year, 200-year, and 500-year flood events; provide river profiles for these events as well as the 10-year and 50-year events.

CFED
Coastal Floodplain Evaluation and Delineation Program

Provide immediate support to OPC & FEMA coastal program – coastal nearshore topography & offshore bathymetric data merge

Support internal DWR floodplain mapping programs

AFM
Awareness Floodplain Mapping Program

100-year advisory floodplain maps are to be completed for identified flood-prone areas that do not currently have floodplain maps but where development is expected in the next 25 years.

With knowledge of where flooding can occur, local planners can avoid building in floodplains.

FEMA
Federal Emergency Management Agency Mapping Studies

In support of the State's need to identify adequate flood hazard information along its river systems; preparing and completing a series of floodplain studies funded by FEMA in areas where communities need better flood hazard data.

Additional floodplain assessments along river and stream systems evaluated by the CVFED.

Dave Wheeldon, Program Manager

Geotechnical System Performance Assessments

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Evaluation & Engineering Studies			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	In support of the Central Valley Flood Protection Plan (CVFPP) and other flood management-related programs, evaluate State/federal project levees, including appurtenant non-project levees, to determine if they meet defined geotechnical criteria and, if appropriate, identify remedial measure(s) to meet those criteria.			
Measurable Objectives	<ul style="list-style-type: none"> Support the CVFPP, flood management projects, local FEMA certification efforts and the legislative mandate of urban 200-year flood protection by 2025 Support federal and local flood management programs by providing geotechnical data, analysis and remedial alternatives to local, State and federal stakeholders Improve geotechnical information exchange methods between State, local and federal flood management agencies Identify and provide geotechnical support of critical levee repairs 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners (Permits)		
<ul style="list-style-type: none"> USACE CVFPB Regional Flood Control Agencies 		<ul style="list-style-type: none"> CVFPB Local Environmental Health Departments USFWS 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Central Valley LMA's 		<ul style="list-style-type: none"> Cities and Counties 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand	-			
<input type="checkbox"/> Improve Operational Efficiency & Transfers	-			
<input type="checkbox"/> Increase Water Supply	-			
<input type="checkbox"/> Improve Water Quality	-			
<input type="checkbox"/> Practice Resource Stewardship	-			
<input checked="" type="checkbox"/> Improve Flood Management	Provides a better understanding of geotechnical system performance and costs to meet defined geotechnical performance criteria.			
<input type="checkbox"/> Improve Administrative / Institutional Tools	-			
Program Support Function				
<input type="checkbox"/> Fiscal	-			
<input type="checkbox"/> Communication	-			
<input type="checkbox"/> Personnel Development	-			

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
GIS database of geotechnical information			Q2 2008				
Geotechnical Assessment Report			Q2 2011				
Remedial Assessment and Cost Estimates Report			Q3 2011				
Geotechnical Data Reports			Q4 2012				
Geotechnical Evaluation Reports			Q3 2013				
Geotechnical Overview Reports			Q3 2013				
Geotechnical Problem Identification and Remediation Reports			Continuous				
Lead	Steve Mahnke		gmahnke@water.ca.gov				
Website							
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>geotechnical data report (GDR), supplemental geotechnical data report (SGDR), geotechnical overview report (GOR), geotechnical evaluation report (GER), geotechnical assessment report (GAR), remedial alternatives and cost estimates report (RACER), geotechnical problem identification and remediation report (GPIRR)</i>					
	<input type="checkbox"/> Brochure(s)	-					
	<input checked="" type="checkbox"/> Fact Sheet(s)						
	<input type="checkbox"/> Multimedia(s)	-					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	-						
Public Meetings / Open Houses	Per request of cities and local communities						
Interactive Workshops	For GER, GOR, and GAR process						
Standing Workgroups	-						
Other	Presentations to local stakeholders and USACE						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> Floodplain Evaluation and Delineation 						
Support To Other IWM Topics	<ul style="list-style-type: none"> UASCE Coordinated Projects, Early Implementation Program (EIP) Regional Flood Plans, CVFPP, System Maintenance, Regional Atlas SJRRP, Floodplain Evaluation and Delineation 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
	TOTAL FUNDING						

GEOTECHNICAL SYSTEM PERFORMANCE ASSESSMENTS

In support of the Central Valley Flood Protection Plan (CVFPP) and other flood management related programs, evaluate urban state-federal project levees, including appurtenant non-project levees, to determine if they meet defined geotechnical criteria and, if appropriate, identify remedial measure(s) to meet those criteria.

Under the Levee Evaluation project, DWR is conducting an unprecedented evaluation of 470 miles of urban levees and 1,620 miles of non-urban levees for hidden defects. The project teams are evaluating state-federal project levees, including associated non-project levees, to determine whether they meet defined geotechnical criteria and, where needed, to identify remedial measures and estimated costs to meet those desired geotechnical criteria.

The Levee Evaluations have four primary goals:

- Identify and provide geotechnical support of critical levee repairs.
- Inform other integrated FloodSAFE programs including development of the Central Valley Flood Protection Plan (CVFPP).
- Support federal and local flood management programs by providing geotechnical data, analysis and remedial alternatives.
- Improve geotechnical information exchange methods between state, local and federal flood management agencies.

DWR is making interim work products from these investigations available to flood management agencies to support ongoing projects. When complete, the evaluations will represent the most comprehensive assessment of historic and current levee integrity information ever performed for the statewide levee system and provide valuable data and analyses that will expedite and reduce the costs of future levee improvement projects.

Levee Distress Factors and Data Collection

Through a combination of historic data compilation, field explorations, and analytical methods, DWR is evaluating approximately 2,100 miles of levee in the Central Valley in terms of the most significant levee hazards:

- Seepage
- Stability
- Erosion
- Settlement
- Seismic (for urban areas only)

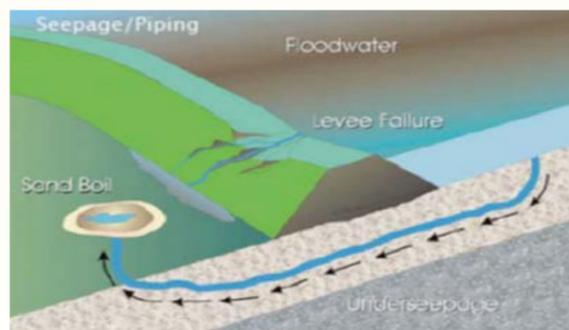
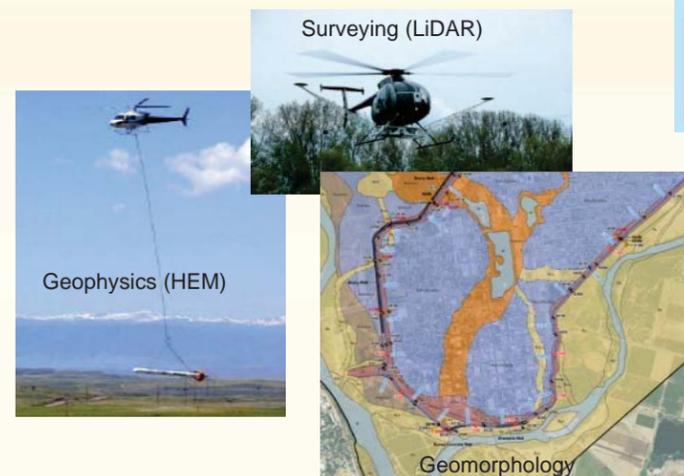
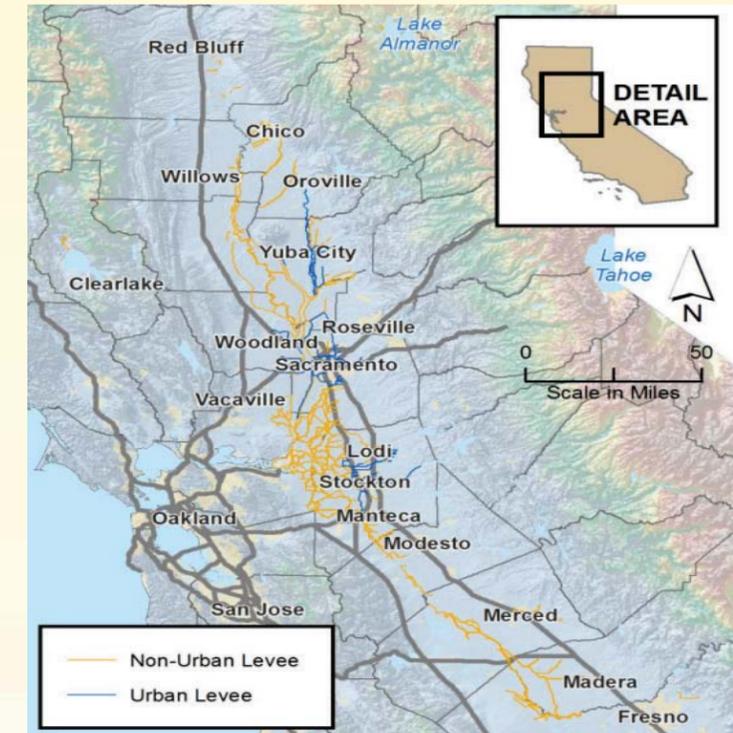
General Technical Approach

- Literature and background research (Locals, USACE, DWR, Consultants)
- Geomorphology
- Surveying
- Geophysics
- Exploration
- Testing
- Analysis
- Problem Identification
- Remedial alternatives and costs

The Levee Problem

California's Central Valley levees were initially constructed in the 1800s to protect farmland using construction techniques and materials (whatever they could find) that would not be considered appropriate now for protecting urban areas. As such, little is comprehensively known about how these levees would be expected to perform under various flow regimes for geotechnical risk factors. The Levee Evaluation project assessments are the first effort to comprehensively understand the geotechnical system performance. Without this knowledge, the State would not be making informed investment decisions.

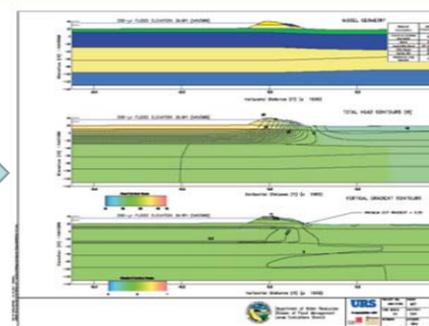
Study Areas



Underseepage of water beneath levees during flood events can destabilize levee foundations and lead to levee failure.



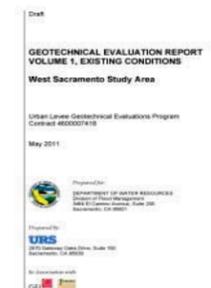
Borings drilled along the levees provide important subsurface soil data that can indicate potential seepage pathways.



Data collected from borings are input into computer models that simulate flood conditions and estimate levee performance.



GDR/GER data are essential for design of new levee improvements.



Final Deliverable: Evaluation Report.

State Basin-Wide Feasibility Studies

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Management Planning & Conservation			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	The studies will examine the options and elements included in the 2012 CVFPP to determine study feasibility and refine study features/characteristics. The primary purpose of these State-led studies is to (1) develop a Locally Preferred Plan for consideration by USACE in formulating and selecting a recommended plan and pursuing federal authorization, (2) prepare environmental compliance evaluations, and (3) establish the State's role in project implementation.			
Measurable Objectives	<ul style="list-style-type: none"> Refine features/characteristics included in the 2012 CVFPP Calculate local and systemwide reductions in flood risk using systemwide model Calculate the cost associated with proposed flood improvements Coordination with the Central Valley Integrated Flood Management Study (CVIFMS) Provide Locally Preferred Plan to be used by USACE for CVIFMS 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> USACE 5 C.V. Urban Flood Control Agencies 		<ul style="list-style-type: none"> CVFPB Department of Fish & Game NOAA Fisheries 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> 100s Central Valley LMAs (RDs, LDs, etc.) NWS 		<ul style="list-style-type: none"> C.V. cities and communities Private land owners 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Changes to floodwater conveyance (stage, flow, timing) within the flood management system			
<input checked="" type="checkbox"/> Increase Water Supply	More frequent activation of floodplains may lead to increases in groundwater recharge			
<input type="checkbox"/> Improve Water Quality				
<input checked="" type="checkbox"/> Practice Resource Stewardship	Promotes multi-benefit projects through Conservation Framework			
<input checked="" type="checkbox"/> Improve Flood Management	Build infrastructure improvements, improve system resiliency and adaptability, coordinate reservoir operations, better utilize floodplains			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing policies, institutions, revenue generation, etc related to flood risk coordination protocols, financial frameworks, adaptive flood management			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

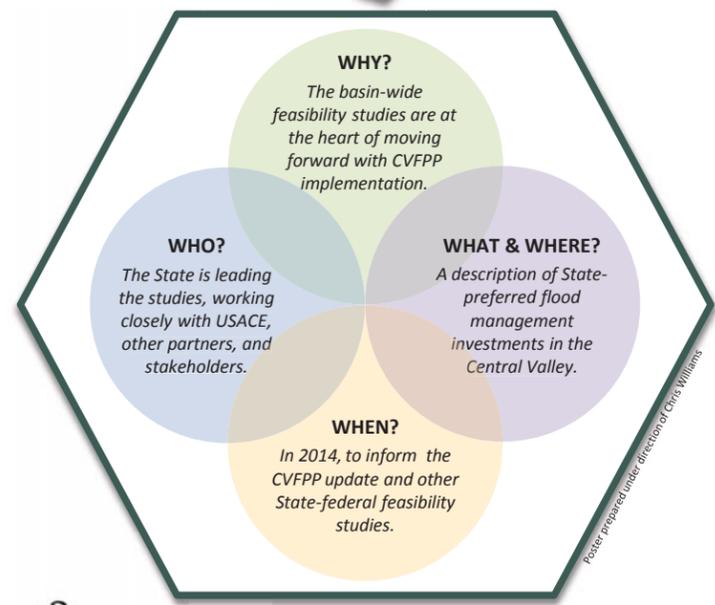
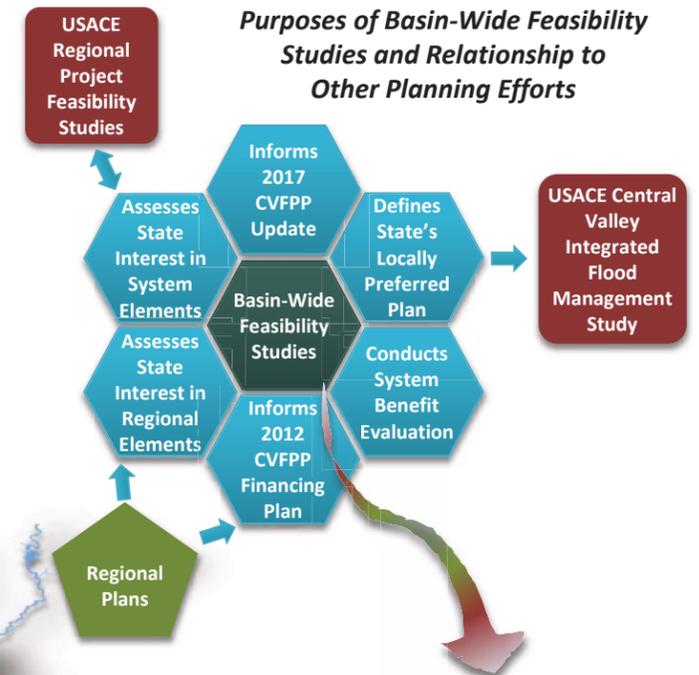
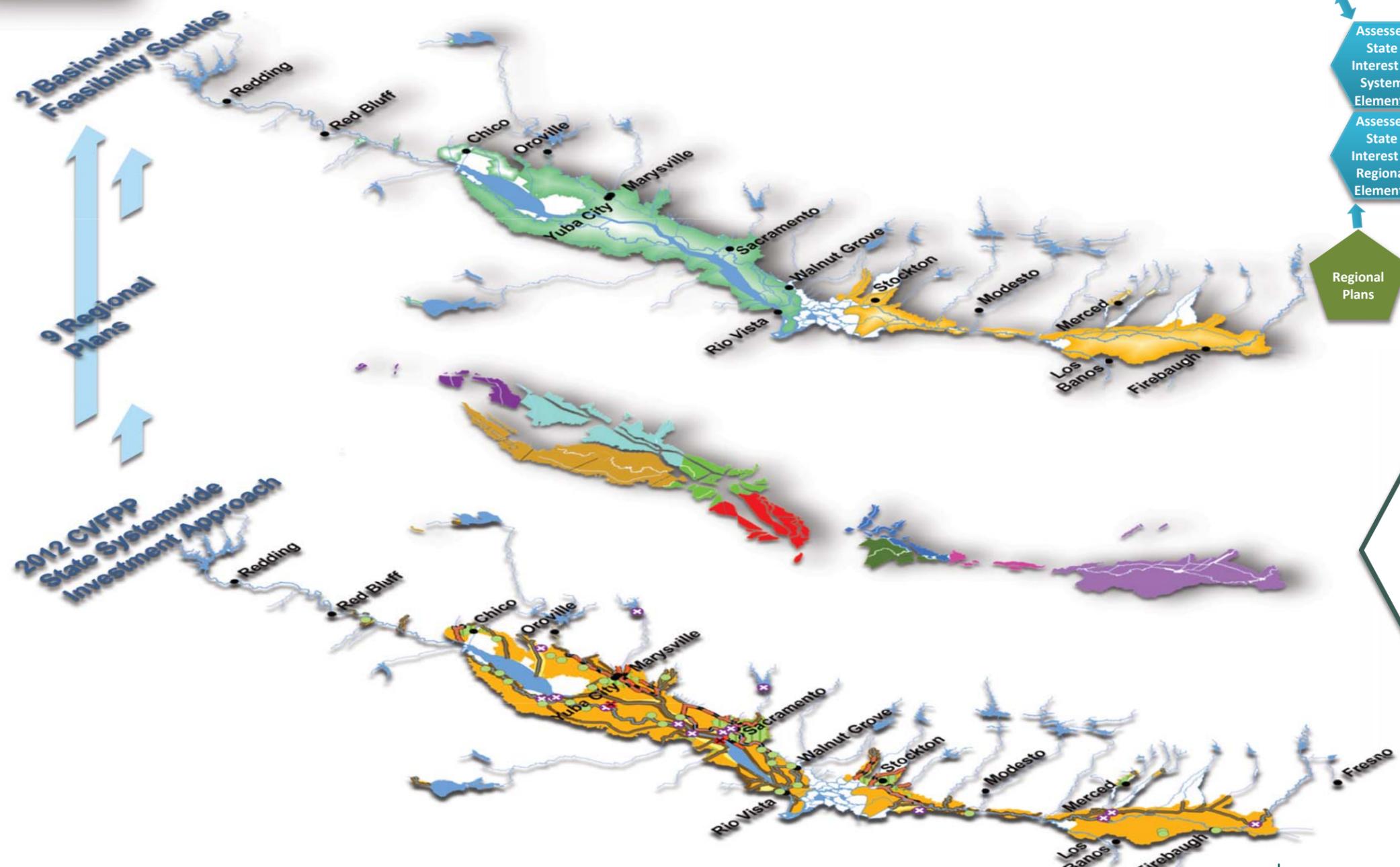
Milestone & Timeline						
Key External Milestone / Deliverable		Date (by Quarter / Year)				
Completed PMP		Q2 2012				
Initial Feasibility Assessments for CVFPP System Elements		TBA				
Initial Systemwide Assessments for CVFPP System and Regional Elements		TBA				
Working Draft Basin-Wide Feasibility Study Report		TBA				
Draft Basin-Wide Feasibility Study Report		TBA				
Completed Studies- integration with CVIFMS		Q3 2017				
Lead	Jeremy Arrich	arrich@water.ca.gov				
Website	www.water.ca.gov/cvfmpp					
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Feasibility Report				
	<input checked="" type="checkbox"/> Brochure(s)	TBA				
	<input checked="" type="checkbox"/> Fact Sheet(s)	TBA				
	<input checked="" type="checkbox"/> Multimedia(s)	TBA				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	TBA					
Public Meetings / Open Houses	TBA					
Interactive Workshops						
Standing Workgroups						
Other	TBA					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> Central Valley Flood Protection Plan Conservation Strategy Floodplain Evaluation & Delineation Flood Project Inspections & Vulnerability Flood Risk Awareness Flood O&M System Performance Assessments 					
Support To Other IWM Topics	<ul style="list-style-type: none"> Central Valley Flood Protection Plan USACE Coordinated Projects Floodplain Management 					
Budget & Funding (in 1,000s)						
		11/12	12/13	13/14	14/15	15/16
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input checked="" type="checkbox"/> Bond (Prop 1E)					
	<input type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input type="checkbox"/> Reimbursable					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Other					
TOTAL FUNDING						



Refinement of System Elements and State's Interests

State Basin-Wide Feasibility Studies

As part of 2012 Central Valley Flood Protection Plan (CVFPP) implementation, two State Basin-Wide Feasibility Studies (one for the Sacramento River Basin and one for the San Joaquin River Basin) will be prepared to refine system elements, integrate regional elements, and determine overall State interest and investments on a systemwide level. Development will be coordinated with the preparation of 9 regional flood plans. The basin-wide feasibility studies and regional plans will support refinement of the State Systemwide Investment Approach presented in the 2012 CVFPP, providing input for development of a financing plan and the 2017 CVFPP update. The State intends to work closely with the U.S. Army Corps of Engineers (USACE) to insure that the State-led planning studies are consistent with federal policies and guidance.



Jeremy Arrich | Division of Flood Management | Central Valley Flood Planning Office

Dam Safety Development and Leadership

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To work on a national level to promote dam safety and direct national policy and resources to benefit citizens of California:</p> <ul style="list-style-type: none"> Representation on the National Dam Safety Review Board (NDSRB) Representation with the Association of State Dam Safety Officials (ASDSO) Work with the Federal Energy Regulatory Commission (FERC) to align policies Work with the federal Dept of Homeland Security (DHS) to ensure security of dams Assist California Emergency Management Agency for emergency action plans Work with local universities to promote dam safety research 			
Measurable Objectives	<ul style="list-style-type: none"> Participate in four board meetings annually and set policy Meet with FERC and develop a policy regarding dam safety Provide information to DHS and complete security assessments for dams Complete inundation maps for all high hazard dams 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> National Dam Safety Review Board Association of State Dam Safety Officials Federal Department of Homeland Security 		<ul style="list-style-type: none"> Federal Energy Regulatory Commission (FERC) 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> California Emergency Management Agency Local Universities 				
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Safe dams are required for reliable water supply			
<input checked="" type="checkbox"/> Improve Water Quality	Safe dams provide consistent high quality water			
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Some dams are critical to providing flood control benefits			
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline					
Key External Milestone / Deliverable	Date (by Quarter / Year)				
Attend all NDSRB meetings	4Q 2012				
Complete inundation maps for all dams	4Q 2014				
Conduct research for liquefaction	4Q 2012				
Complete security assessments for dams	4Q 2012				
Complete policy on FERC/DSOD policy	4Q 2013				
Lead	David Gutierrez daveg@water.ca.gov				
Website	http://www.water.ca.gov/damsafety				
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s) <i>Various reports available from FEMA and DHS</i>				
	<input checked="" type="checkbox"/> Brochure(s) <i>Various brochures available from ASDSO</i>				
	<input checked="" type="checkbox"/> Fact Sheet(s) <i>Various fact sheets available from ASDSO</i>				
	<input type="checkbox"/> Multimedia(s)				
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities					
Public Meetings / Open Houses					
Interactive Workshops					
Standing Workgroups	Various standing workgroups for all of the partnering organizations				
Other					
Internal Coordination (11/12 only)					
Support From Other IWM Topics	<ul style="list-style-type: none"> Shared support of research on various dam safety issues 				
Support To Other IWM Topics	<ul style="list-style-type: none"> Provide information as needed 				
Budget & Funding (in \$1,000s)					
	11/12	12/13	13/14	14/15	15/16
Forecasted Budget					
Expected Funding	<input type="checkbox"/> General Fund				
	<input type="checkbox"/> Bond (Prop 13)				
	<input type="checkbox"/> Bond (Prop 50)				
	<input type="checkbox"/> Bond (Prop 1E)				
	<input type="checkbox"/> Bond (Prop 84)				
	<input checked="" type="checkbox"/> Fees				
	<input checked="" type="checkbox"/> Reimbursable				
	<input type="checkbox"/> In-Kind Support				
	<input type="checkbox"/> Other				
	TOTAL FUNDING				

DAM SAFETY DEVELOPMENT AND LEADERSHIP



David Gutierrez, Chief
Division of Safety of Dams

National Dam Safety Review Board



- DSOD's Chief serves as a board member on the National Dam Safety Review Board. The purpose of the Board is to monitor the safety and security of dams in the United States.
- The Board provides guidance and direction regarding dam safety on a national basis



- DSOD assists CalEMA to complete emergency action plans and inundation maps.
- DSOD serves as a technical expert during dam safety emergencies.



Department of Homeland Security



- DSOD works with DHS by providing information to ensure secure dams within California.
- Dam safety assessments are completed by DHS with the assistance of DSOD

Federal Agencies



US ARMY
CORPS OF ENGINEERS

- DSOD works with a variety of federal agencies to promote dam safety nationwide
- DSOD assists federal agencies with California specific technical issues.
- FEMA provides grants to California through the National Dam Safety Program



Association of State Dam Safety Officials

- DSOD works closely with all 50 states.
- ASDSO provides national leadership to strengthen state dam safety programs.



California State University And University of California



- DSOD partners with local California universities to promote the state of the art in dam safety engineering



**Flood Emergency Response Information System/
California Data Exchange Center**

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety 			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	In California, flood management is a shared responsibility between local agencies (cities, counties, reclamation districts, and local maintaining agencies), State agencies (Department of Water Resources and California Department of Homeland Security), federal agencies (US Army Corps of Engineers, Federal Emergency Management Agency, National Weather Service California-Nevada River Forecast Center), and reservoir operators. During any major floods flood information must be available to all responsible agencies to make flood operational decisions. Therefore, exchange and sharing of flood information becomes critical to saving lives and protecting properties from floods. The Flood Emergency Response Information System (FERIS) is an integrated geo spatial information system for flood operations in California, and allows for full integration of the existing California Data Exchange Center (CDEC) systems including real-time data collection, data exchange, Forecast-Coordinated Operations of the reservoirs, and the Central Valley flood system as well as integration of additional programs as they are developed.			
Measurable Objectives	<ul style="list-style-type: none"> The number of agencies participating in CDEC/FERIS data collection efforts Number of "hits" on the CDEC/FERIS website The number of stations included in CDEC The number of geo spatial applications, models, and tools accessible through CDEC/FERIS 			
Key Agency & Partner Interaction				
Just a few of the CDEC partners:				
				
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Increase accessibility to data and models to support the evaluation of river, watershed, and reservoir conditions, water supply /water transfer opportunities			
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Provides real-time access to flood related data to public and local agencies and supports flood operations decision making within the Flood Operations Center			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Serves as information collection and dissemination tool for local, state, and federal agencies with flood management responsibilities: knowledge is power!			
Program Support Function				
<input type="checkbox"/> Fiscal	-			
<input type="checkbox"/> Communication	-			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Initial Flood Emergency Response Information System Rollout to DWR			Q2 2012				
Lead	David Parker		parkerd@water.ca.gov				
Website	http://cdec4gov.water.ca.gov/FloodER						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	Flood Emergency Response Information System Concept					
	<input checked="" type="checkbox"/> Brochure(s)	California Data Exchange Center and Flood Emergency Response					
	<input type="checkbox"/> Fact Sheet(s)						
	<input checked="" type="checkbox"/> Multimedia(s)	CDEC website					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> State Climatologist Reservoir Coordinated Operations Snow Surveys/Runoff Forecasting River Forecasting Food Project Integrity & Inspection Flood Operations 						
Support To Other IWM Topics	<ul style="list-style-type: none"> Forecast-Coordinated Operations (F-CO) Flood Emergency Response Delta Emergency Response SWP Operations CVP Operations USDA 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
	TOTAL FUNDING						

Flood Emergency Response Information System/ California Data Exchange Center

David Parker – Hydrology Branch – Hydrology and Flood Operations Office – Division of Flood Management

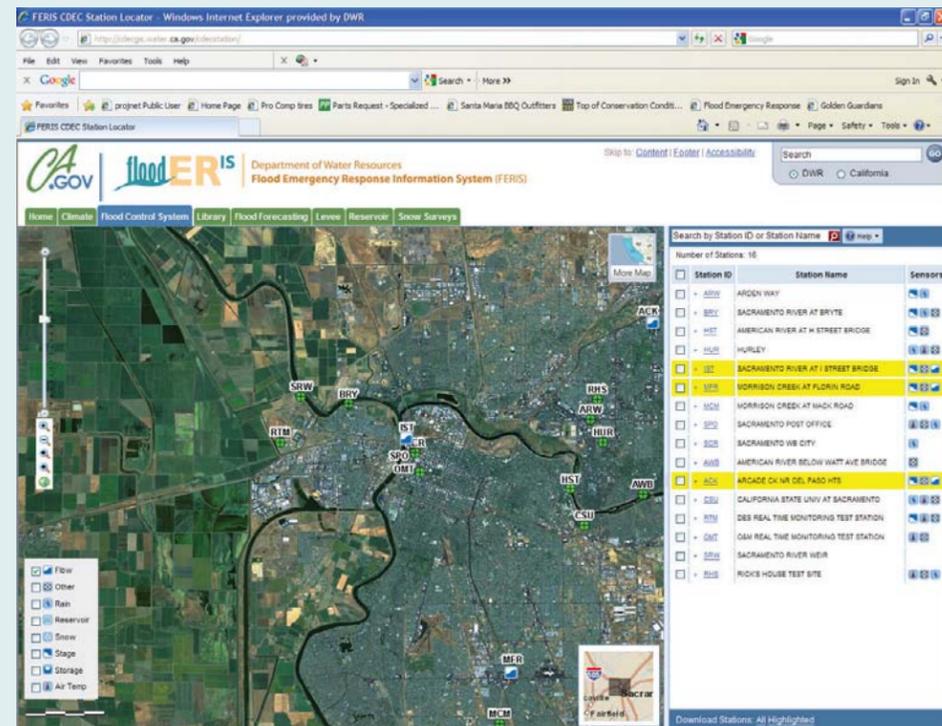
Just a few of the CDEC partners:



In California, flood management is a shared responsibility between local agencies (cities, counties, reclamation districts, and local maintaining agencies), State agencies (Department of Water Resources and California Department of Homeland Security), federal agencies (US Army Corps of Engineers, Federal Emergency Management Agency, National Weather Service California-Nevada River Forecast Center), and reservoir operators. During any major floods flood information must be available to all responsible agencies to make flood operational decisions. Therefore, exchange and sharing of flood information becomes critical to saving lives and protecting properties from floods.

Flood Emergency Response Information System (FERIS)

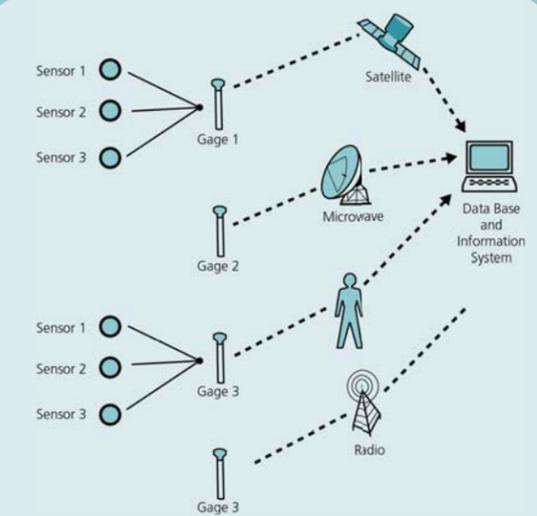
The Flood Emergency Response Information System (FERIS) is an integrated geospatial information system for flood operations in California, and allows for full integration of the existing California Data Exchange Center (CDEC) systems including real-time data collection, data exchange, Forecast-Coordinated Operations of the reservoirs, and the Central Valley flood system as well as integration of additional programs as they are developed.



FERIS allows users to customize maps with layers that apply to their specific interest. Map results can be saved and shared with partner agencies.



Sensors collect data at stations across the state. This data is then relayed to the CDEC and can be viewed through the CDEC and FERIS Interfaces.

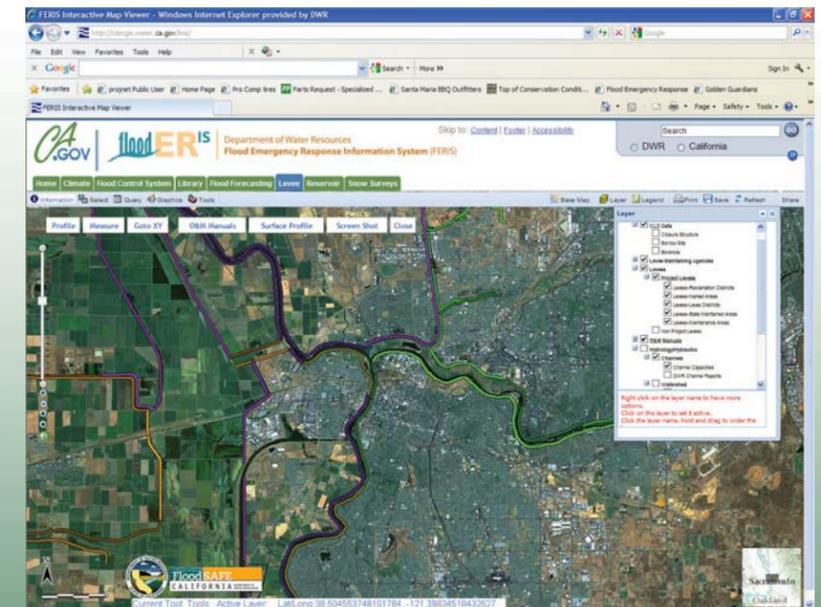


CDEC uses secure, Web-based technologies to ensure ease of use and rapid access to important flood information for the reservoir operations staff. Both forecasted and observed data are maintained in relational databases accessible through user-friendly Web-based interfaces.

California Data Exchange Center (CDEC)

The California Data Exchange Center has developed an integrated system containing real-time data collection, data exchange, Forecast-Coordinated Operations of the reservoirs, and the Central Valley flood system. FERIS is an extension of the CDEC information integration.

<http://cdec4gov.water.ca.gov/>



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



Forecast-Coordinated Operations (F-CO)

Focus Area (Primary Goal)	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Flood Emergency Response and Dam Safety 			
Internal Coordination Emphasis	<input checked="" type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> To provide better runoff forecasts to individual reservoir operators and improve coordination for operation of the reservoirs and their releases within the Sacramento and San Joaquin Basins. Increase data sharing among reservoir operators and coordinate operation of the reservoirs to reduce peak flood flows downstream of the reservoirs. Reduce downstream stages through coordinated releases to improve flood protection. 			
Measurable Objectives	<ul style="list-style-type: none"> Number of reservoirs participating in F-CO Number of agencies participating F-CO Improvement in forecasting tools to generate five-days runoff forecasts Reduction of peak flood flows (in CFS) downstream of the reservoirs 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
				
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> SWP Reservoir Operators <ul style="list-style-type: none"> SWP (Oroville) Yuba County Water Agency (New Bullards Bar) Merced Irrigation District (Exchequer) USBR-CVO (Friant) Kings River Water Agency/Kings River Conservation District (Pine Flat) USACE Exchange Contractors 		<ul style="list-style-type: none"> Local Emergency Responders Levee Maintainers 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input checked="" type="checkbox"/> Increase Water Supply	Maintain water supply objectives while meeting flood operations obligations			
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Improves flood management flexibility and ability to respond to major flood events while limiting impact on water supply			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing policies, institutions, to provide a more adaptive flood management operations			
Program Support Function				
<input type="checkbox"/> Fiscal	-			
<input type="checkbox"/> Communication	-			
<input type="checkbox"/> Personnel Development	-			

Milestone & Timeline					
Key External Milestone / Deliverable	Date (by Quarter / Year)				
Develop program implementation plans for each watershed on the San Joaquin River	Q4 2014				
Install additional gaging systems	Q3 2013				
Develop additional forecasting tools and reservoir operations models	Q2 2013				
Enhance decision support system	Q2 2013				
Evaluate opportunities to optimize operations	Q4 2012				
Develop operational protocols and clarify operating rules with USACE	Q2 2014				
Conduct training and flood exercises	Q4 2012				
Lead	Boone Lek	blek@water.ca.gov			
Website	http://cdec4gov.water.ca.gov/				
Key Program Information Materials	<input type="checkbox"/> Report(s)				
	<input checked="" type="checkbox"/> Brochure(s)	Forecast-Coordinated Operations for the San Joaquin River Watershed			
	<input checked="" type="checkbox"/> Fact Sheet(s)	San Joaquin Valley Forecast Coordinated Operations – A Program Overview			
	<input checked="" type="checkbox"/> Multimedia(s)	CDEC website			
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities					
Public Meetings / Open Houses					
Interactive Workshops					
Standing Workgroups	Quarterly Yuba/Feather and San Joaquin F-CO Coordination Meetings				
Other					
Internal Coordination (11/12 only)					
Support From Other IWM Topics	<ul style="list-style-type: none"> CDEC/FERIS (Hydro-Meteorological data collectors: USGS/Regions/Locals) Snow Surveys 				
Support To Other IWM Topics	<ul style="list-style-type: none"> Flood Emergency Response System Reoperation Climate Change 				
Budget & Funding (in \$1,000s)					
	11/12	12/13	13/14	14/15	15/16
Forecasted Budget					
Expected Funding	<input checked="" type="checkbox"/> General Fund				
	<input type="checkbox"/> Bond (Prop 13)				
	<input type="checkbox"/> Bond (Prop 50)				
	<input checked="" type="checkbox"/> Bond (Prop 1E)				
	<input checked="" type="checkbox"/> Bond (Prop 84)				
	<input type="checkbox"/> Fees				
	<input type="checkbox"/> Reimbursable				
	<input type="checkbox"/> In-Kind Support				
	<input type="checkbox"/> Other				
	TOTAL FUNDING				

Forecast-Coordinated Operations for the San Joaquin River Watershed

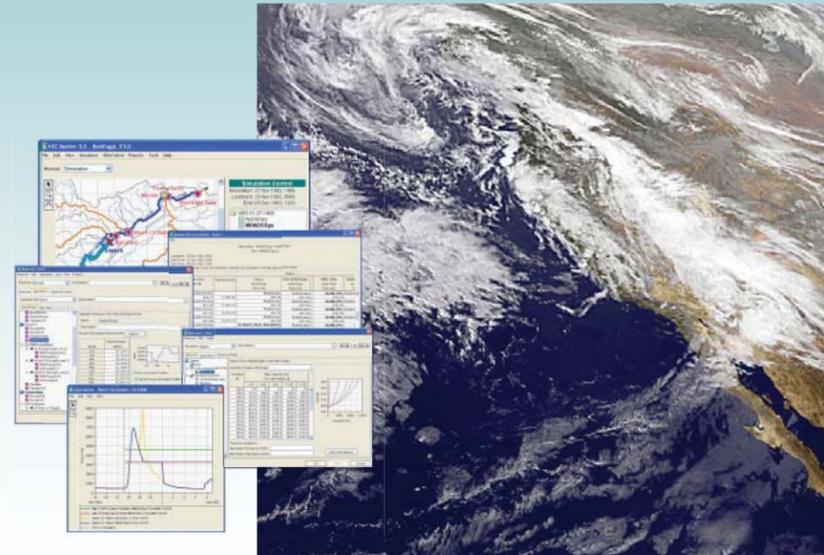
Boone Lek – Hydrology Branch – Hydrology and Flood Operations Office – Division of Flood Management

Implementing Agencies/Partners:

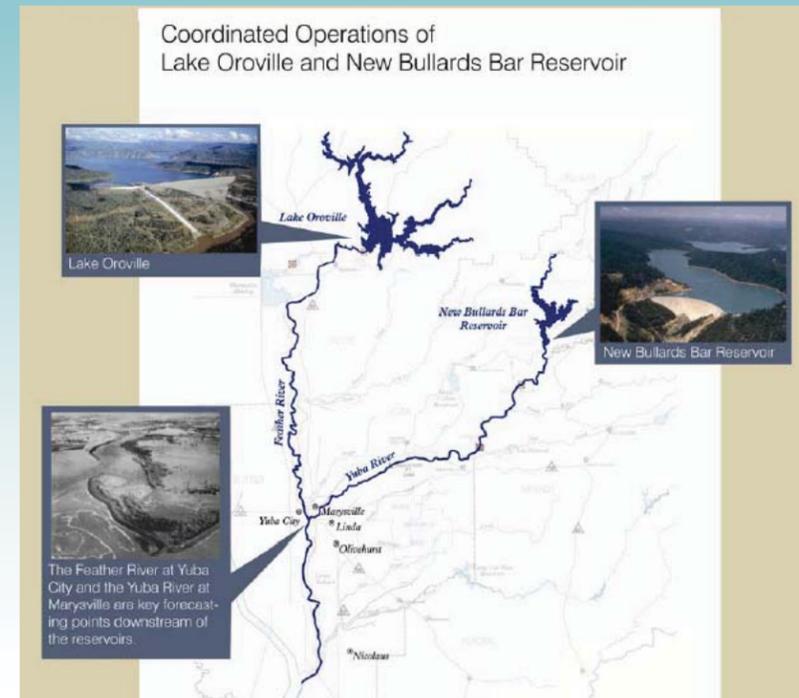


The purpose of Forecast-Coordinated Operations is to improve the real-time flood control operations, and to develop, test, and implement the coordinated operation of reservoirs based on forecasted flood flows. F-CO provides for the coordinated timely releases of flood flows, potentially reducing peak flows at downstream locations, and improves reporting to downstream emergency operation managers, the levee districts, and the state and local Offices of Emergency Services

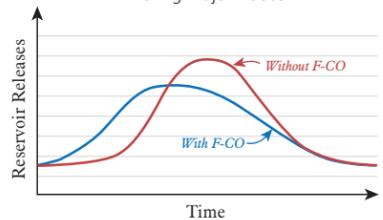
Forecast-Based Operations involve providing an enhanced five-day river forecast and better tools to operators of reservoirs to help them operate with a greater level of certainty and improved ability to schedule reservoir releases. To improve flood forecasting, additional real-time gaging stations will be installed to collect rainfall, snow, and streamflow data from throughout the San Joaquin River system.



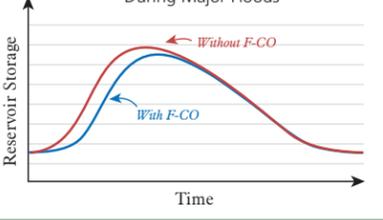
Real-time data is used to improve rainfall and snow melt forecasting models.



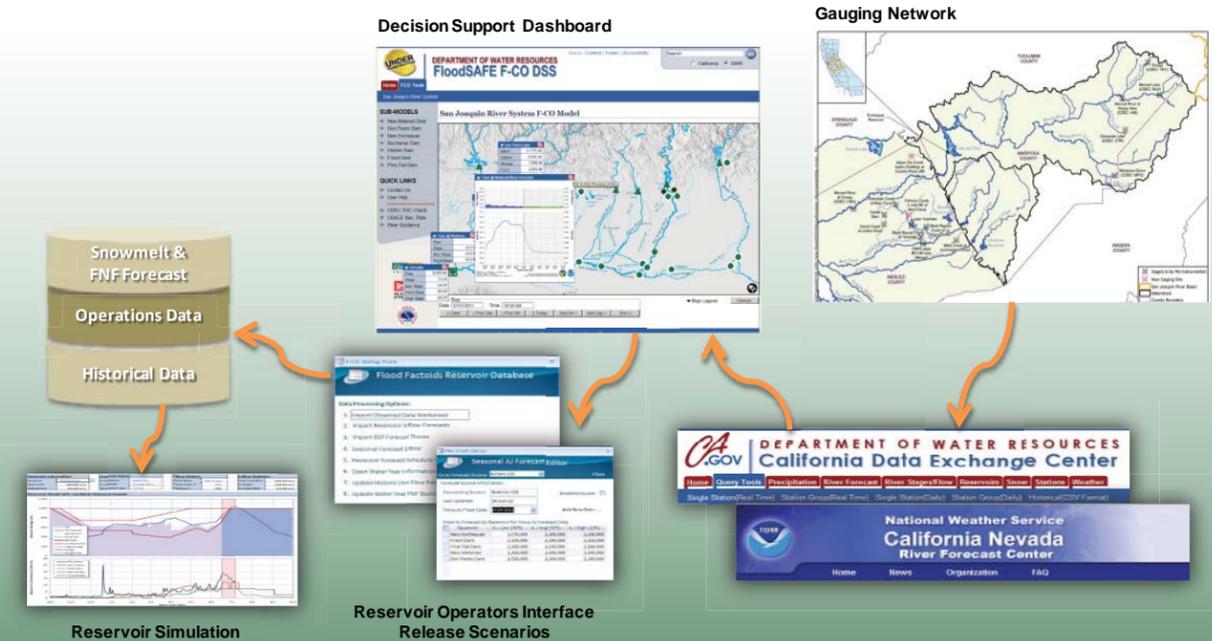
Conceptual Reservoir Release Pattern with and without Forecast-Coordinated Operation During Major Floods



Conceptual Reservoir Storage Pattern with and without Forecast-Coordinated Operation During Major Floods



Coordinated operations during a flood event will help reservoir operators to understand the system-wide effects of releases, and integrate flood operations and responses in the overall San Joaquin watershed.



PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY



California Water Plan

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Strategic Water Planning			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Develop, analyze and recommend strategic IWM actions and policies. Characterize and quantify recent and current water supply and use conditions. Develop new process and framework for informing State IWM funding and finance decisions. Provide forums for state and federal agencies to integrate resource management planning. Report on implementation progress for IWM activities. 			
Measurable Objectives	<ul style="list-style-type: none"> Produce final Update 2013 documentation by December 31, 2013 (comply with Water Code). Achieve uniformity and continuity of data (and metadata) collection/management/synthesis. Develop long term strategic vision, objectives, goals, recommendations and implementation plan that effectively inform IWM decisions. Identify critical State and regional IWM investment priorities and recommend financial strategies and revenue sources. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners State: Boating and Waterways, Sierra Nevada Conservancy, Native American Heritage Commission, Natural Resources Agency; Business, Transportation and Housing Agency, Department of Transportation		Regulatory Agencies / Partners State: Water boards, Air Resources Board, Department of Fish and Game, Department of Public Health, CalEPA, CA Public Utilities Commission CA Energy Commission, Coastal Commission, Ocean Protection Council, Toxic Substance Control Board, Delta Stewardship Council Federal: USFWS, NOAA, USEPA		
Operating Agencies / Partners State: Cal EMA, Parks and Recreation, Federal: USACE, FEMA, US Bureau of Reclamation		Land Use Agencies / Partners State: Governor's Office of Planning and Research, Dept. of Conservation, Housing and Community Development, Strategic Growth Council, Food and Agriculture, Forestry and Fire Protection, State Lands Commission Federal: US Forest Service, NRCS, US Marine Corps, Department of Defense, USGS, USNPS, BLM		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Agricultural Water Use Efficiency; Urban Water Use Efficiency			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Conveyance – Delta; Conveyance – Regional / Local; System Reoperation; Water Transfers			
<input checked="" type="checkbox"/> Increase Water Supply	Conjunctive Management & Groundwater Storage; Desalination –Brackish & Seawater Precipitation Enhancement; Recycled Municipal Water; Surface Storage			
<input checked="" type="checkbox"/> Improve Water Quality	Drinking Water Treatment & Distribution; Groundwater / Aquifer Remediation Matching Quality to Use; Pollution Prevention; Salt & Salinity Management; Urban Runoff Management			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Agricultural Lands Stewardship; Economic Incentives (Loans, Grants & Water Pricing) Ecosystem Restoration; Forest Management; Land Use Planning & Management Recharge Areas Protection; Water-Dependent Recreation; Watershed Management; Sediment Transport Management			
<input checked="" type="checkbox"/> Improve Flood Management	Flood Risk Management; Integrated Flood Management			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Collaborative Decision-making; Education; Legislation; Voter-approved Initiatives; Regulation; Permitting; Litigation; Cultural Resources Management; Water Technology			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline					
Key External Milestone / Deliverable			Date (by Quarter / Year)		
Water Plan Update 2013 Assumptions and Estimates Report			Q2 2012		
Update 2013 Stakeholder Draft			Q3 2012		
CA Water Management Progress Report			Q4 2012		
Update 2013 Administrative Draft			Q4 2012		
Update 2013 Public Review Draft			Q1 2013		
Update 2013 Final Release			Q4 2013		
Lead	Paul Massera		pmassera@water.ca.gov		
Website	www.waterplan.water.ca.gov				
Key Program Information Materials	<input type="checkbox"/> Report(s)				
	<input checked="" type="checkbox"/> Brochure(s)	California Water Plan Update 2013			
	<input type="checkbox"/> Fact Sheet(s)				
	<input type="checkbox"/> Multimedia(s)				
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities	State Agency Steering Committee Meetings (Not Public Meetings): July 9, August 4, September 29, November 9, March 1, May 3 (plus subcommittees)				
Public Meetings / Open Houses	Federal Agency Network –Web-based coordination (Linked-in)				
Interactive Workshops	Public and Tribal Advisory Committee Meetings: (Public Meetings): August 5, December 9, December 12, February 2, March 22, April 4, June 22				
Standing Workgroups	Water Plan Plenary – October 26-27, 2011				
Other	Several Regional, Topic Caucus and other Workshops/ Meetings: Land Use, Groundwater, Finance, Flood, Technology, Water Quality, Disadvantaged Communities/Environmental Justice, Graphics, SWAN				
Internal Coordination (11/12 only)					
Support From Other IWM Topics	<ul style="list-style-type: none"> Climate Change, Bond Management System, Sustainability Indicators, Project Management Development, Regional Coordination, IRWM Strategic Plan, SWAN, Land and Water Use Data, Statewide Flood Management Planning, System Reoperation, Public Benefits Evaluation, Technical Publications, Economic Assessments, Central Valley Flood Protection Plan, CASGEM 				
Support To Other IWM Topics	<ul style="list-style-type: none"> CWP Regional Forums can support all regional outreach for any topic area CWP Caucuses frequently serve as focus groups for several topic areas Water Plan scope includes a roll up and integration for the topic areas cited above 				
Budget & Funding (in 1,000s)			11/12	12/13	13/14
Forecasted Budget					
Expected Funding	<input checked="" type="checkbox"/> General Fund				
	<input type="checkbox"/> Bond (Prop 13)				
	<input type="checkbox"/> Bond (Prop 50)				
	<input type="checkbox"/> Bond (Prop 1E)				
	<input checked="" type="checkbox"/> Bond (Prop 84)				
	<input type="checkbox"/> Fees				
	<input type="checkbox"/> Reimbursable				
	<input type="checkbox"/> In-Kind Support				
	<input checked="" type="checkbox"/> Project				
	TOTAL FUNDING				

California Water Plan

State's Blueprint for Integrated Water Management and Sustainability

VISION

- Public Health, Safety, Quality of Life
- Vitality, Productivity, Economic Growth
- Healthy Ecosystem, Cultural Heritage

Foundational Actions for SUSTAINABLE WATER USES

- Use Water Efficiently
- Protect Water Quality
- Expand Environmental Stewardship

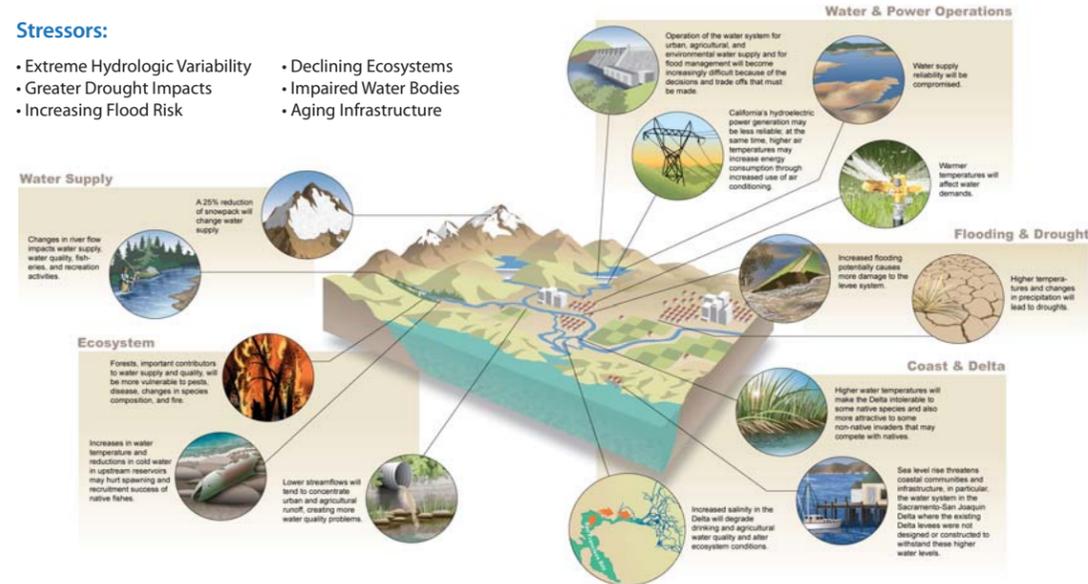
Initiatives for RELIABLE WATER SUPPLIES

- Implement Integrated Regional Water Management
- Improve Statewide Water and Flood Management Systems

Imperative to Act

Stressors:

- Extreme Hydrologic Variability
- Declining Ecosystems
- Greater Drought Impacts
- Impaired Water Bodies
- Increasing Flood Risk
- Aging Infrastructure



A Range of Choices

Strategy	MAF/year	Potential Strategy Benefits	Accumulated Cost by 2020 (\$ Billion)
Provides Water Supply	MAF/year	Improves Drought Preparedness	3.88
Improves Drought Preparedness	MAF/year	Operational Efficiency & Cost Savings	1.2 - 17.2
Operational Efficiency & Cost Savings	MAF/year	Reduces Flood Impacts	N/A
Reduces Flood Impacts	MAF/year	Environmental Benefits	N/A
Environmental Benefits	MAF/year	Energy Benefits	N/A
Energy Benefits	MAF/year	Recreational Opportunities	N/A
Recreational Opportunities	MAF/year	Reduces Drought Overdraft	N/A
Reduces Drought Overdraft	MAF/year	Increases Water Availability by 2020 (1 Billion)	N/A

Reduce Water Demand

Water conservation has become a viable long-term supply option because it saves considerable capital and operating cost for utilities and consumers, avoids environmental degradation, and creates multiple benefits.

Strategy	MAF/year	Potential Strategy Benefits	Accumulated Cost by 2020 (\$ Billion)
Agricultural Water Use Efficiency	0.1 - 1.0	Water Conservation	0.3 - 5.0
Urban Water Use Efficiency	1.2 - 3.1	Water Conservation	2.5 - 6.0

Improve Operational Efficiency & Transfers

California's water system responds to our need to move water from where it occurs to where it will be used.

Strategy	MAF/year	Potential Strategy Benefits	Accumulated Cost by 2020 (\$ Billion)
Conveyance—Delta	N/A	Water Conservation	1.2 - 17.2
Conveyance—Regional/Local	N/A	Water Conservation	N/A
System Reoperation	N/A	Water Conservation	N/A
Water Transfers	N/A	Water Conservation	N/A

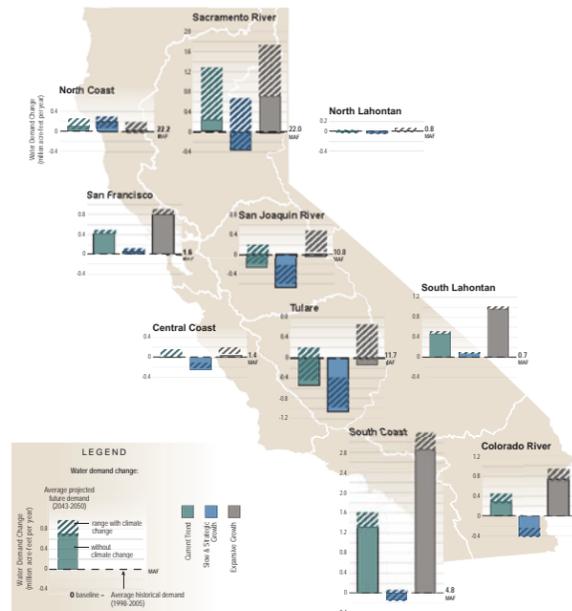
Increase Water Supply

California's communities are finding innovative ways to generate new supplies.

Strategy	MAF/year	Potential Strategy Benefits	Accumulated Cost by 2020 (\$ Billion)
Conjunctive Management & Groundwater Storage	0.5 - 2.0	Water Conservation	N/A
Desalination - Brackish & Seawater	0.3 - 0.4	Water Conservation	2.0 - 3.0
Precipitation Enhancement	0.3 - 0.4	Water Conservation	0.1 - 0.2
Recycled Municipal Water	1.8 - 2.3	Water Conservation	6.0 - 9.0
Surface Storage—CALFED	0.1 - 1.1	Water Conservation	0.7 - 9.2
Surface Storage—Regional/Local	N/A	Water Conservation	N/A

Planning for an Uncertain Future

Future Regional Water Demand Changes by Scenario



Transparent and Inclusive Planning

Project Organization and Public Process
California Water Plan Update 2009



Enhancements for Update 2013

State Integrated Water Management Finance Plan



Improved Integration



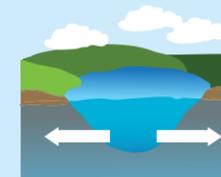
CA Water Management Progress Report



Broadened Outreach Process



Expanded Groundwater Data and Management



Further Data and Analytical Tools Development



Federal Advocacy

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Legislative, Budget, and Communication			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>To advocate to Congress and the Federal Administration to promote the State's interests in critical flood control projects that are cost-shared by federal, State and local flood control agencies. These efforts include:</p> <ul style="list-style-type: none"> Advocating for increased flood control and ecosystem restoration appropriations and authorizations Advocating for credit for the State's investment in flood control and ecosystem restoration projects beyond the standard cost share Advocating for streamlined federal regulatory procedures 			
Measurable Objectives	<ul style="list-style-type: none"> President's Budget Allocations for California Flood Control Projects (annual) Congressional Appropriations for California Flood Control Projects (annual) USACE Work Plan Allocations for California Flood Control Projects (annual) Water Resources Development Act (WRDA) Authorizations and Legislation (as requested by the U.S. House and Senate) Participate in the National Coalition of Flood Control Projects Partners efforts to develop issue papers and proposed legislation regarding flood control reforms developed by the Coalition 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Central Valley Flood Protection Board (CVFPB) United States Army Corps of Engineers (USACE) Central Valley local flood risk management agencies 		<ul style="list-style-type: none"> CVFPB USACE CA Dept. of Fish and Game NOAA Fisheries, U.S. Fish and Wildlife Service 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> Hundreds of Central Valley LMAs (RDs, LDs, etc.) 		<ul style="list-style-type: none"> Central Valley cities, counties & communities 		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input checked="" type="checkbox"/> Improve Flood Management	Increase federal authorizations and appropriations for critical flood control projects			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	New and/or changes to existing USACE policies related to flood control projects			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline																																																																					
Key External Milestone / Deliverable					Date (by Quarter / Year)																																																																
Fall trip to Washington, DC to meet with OMB, USACE and Congress re: Appropriations, Authorizations and USACE Policy Issues					Q3-Q4 (Annually)																																																																
USACE/DWR Program Manager Team Training re: Upcoming Federal Funding Needs					Q4 (Annually)																																																																
USACE/DWR Program Manager Team Presentations re: Upcoming Federal Funding Needs					Q1 (Annually)																																																																
Appropriations Requests and Factsheets					Q1 (Annually)																																																																
Spring trip to Washington, DC to meet with OMB, USACE and Congress					Q1-Q2 (Annually)																																																																
Summer trip to Washington, DC to meet with OMB, USACE and Congress					As needed																																																																
Testify at Congressional Hearings re: Appropriations, Authorizations and USACE Policy Issues					As requested																																																																
Participate in the National Coalition of Flood Projects Partners Washington, DC meetings with OMB, USACE and Congress re: Critically Needed Flood Control Reforms					As needed																																																																
Lead	Lani Arena/Rod Mayer				rmayer@water.ca.gov																																																																
Website																																																																					
Key Program Information Materials	<input type="checkbox"/> Report(s)																																																																				
	<input type="checkbox"/> Brochure(s)																																																																				
	<input checked="" type="checkbox"/> Fact Sheet(s)	California DWR Fiscal Year Appropriations Requests, Authorization Requests, and Factsheets (Biannual)																																																																			
	<input type="checkbox"/> Multimedia(s)																																																																				
External Communication & Engagement Approach (11/12 only)																																																																					
Public Comment Opportunities	Presentations to the CVFPB and the California Water Commission																																																																				
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Support From Other IWM Topics	<ul style="list-style-type: none"> USACE Coordinated Projects 																																																																				
Support To Other IWM Topics	<ul style="list-style-type: none"> USACE Coordinated Projects Floodplain Management Flood O&M System Performance Assessments 																																																																				
Budget & Funding (in \$1,000s)																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>11/12</th> <th>12/13</th> <th>13/14</th> <th>14/15</th> <th>15/16</th> </tr> </thead> <tbody> <tr> <td>Forecasted Budget</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="10">Expected Funding</td> <td><input type="checkbox"/> General Fund</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 13)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 50)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Bond (Prop 1E)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Bond (Prop 84)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Fees</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Reimbursable</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> In-Kind Support</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL FUNDING</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							11/12	12/13	13/14	14/15	15/16	Forecasted Budget						Expected Funding	<input type="checkbox"/> General Fund					<input type="checkbox"/> Bond (Prop 13)					<input type="checkbox"/> Bond (Prop 50)					<input checked="" type="checkbox"/> Bond (Prop 1E)					<input type="checkbox"/> Bond (Prop 84)					<input type="checkbox"/> Fees					<input type="checkbox"/> Reimbursable					<input type="checkbox"/> In-Kind Support					<input type="checkbox"/> Other					TOTAL FUNDING					
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Federal Advocacy

Lani Arena and Rod Mayer – FloodSAFE Program Management Office –
Division of Flood Management



California's Central Valley flood system needs \$14 - \$17 billion invested to reduce flood risk

Advocacy in Washington D.C. increases funding for U.S. Army Corps of Engineers' projects and credit for State investments

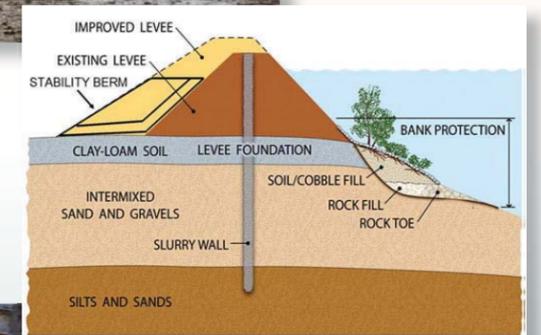


U.S. Army Corps of Engineers helps California to improve flood system in the Central Valley



Washington D.C. advocacy meetings with:

- U.S. Army Corps of Engineers
- Council on Environmental Quality
- Office of Management and Budget
- 2 California Senators
- 18 Central Valley Members of the House of Representatives
- California House of Representatives Caucus Leaders
- House Appropriations Committee
- Senate Appropriations Committee
- House Transportation and Infrastructure Committee
- Senate Environment and Public Works Committee



Technical Publications (Technical Publications & Communication Media)

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Project Services & Cross Cutting Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	The mission of Technical Publications and Communication Media Unit is to assist DWR technical and management staff in writing, organizing, and preparing clear, concise, and accurate reports and other communications that serve and educate the public and technical and science communities, and to help editors and graphic designers be consistent in their approach to language, message, and design of high-quality DWR publications and multimedia productions.			
Measurable Objectives	<ul style="list-style-type: none"> • Completion of Water Plan • Completion of IEP newsletter • Completion of e-news (Delta, Water Plan, Project Management) • Completion of technical reports as requested by DWR-wide customers 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • DWR 				
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	Provide communication services to all staff of DWR			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
California Water Plan			December 2013				
Delta e-News			Weekly				
Water Plan e-News			Weekly				
Project Management e-News			Monthly				
IEP Newsletter			Quarterly				
Lead	Patricia Cornelius		pcorn@water.ca.gov				
Website	dwrpo.water.ca.gov/StyleGuide/styleHome.html						
Key Program Information Materials	<input type="checkbox"/> Report(s)						
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input checked="" type="checkbox"/> Multimedia(s)	On-line Style Guide dwrpo.water.ca.gov/StyleGuide/styleHome.html					
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
Work team leads/production managers for Water Plan							
Internal Coordination (11/12 only)							
Support From Other IWM Topics							
<ul style="list-style-type: none"> • All of IWM • Water Plan 							
Support To Other IWM Topics							
<ul style="list-style-type: none"> • Water Plan • IEP staff/members • PSO/ Bay Delta Office/Regional Offices • Any program on an as-needed basis 							
Budget & Funding (in 1,000s)							
			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input checked="" type="checkbox"/> Other -- Overhead						
TOTAL FUNDING							

TECHNICAL PUBLICATIONS & COMMUNICATION MEDIA

The mission of the Technical Publications and Communication Media Unit is to assist DWR technical and management staff in writing, organizing, and preparing clear, concise, and accurate reports and other communications that serve and educate the public and technical and science communities, and to help editors and graphic designers be consistent in their approach to language, message, and design of high-quality DWR publications and multimedia productions.

Recent and On-Going Projects

- Project management**
The five-volume California Water Plan involves long-range planning, coordination, organization, attention to detail, and careful monitoring to create a product beneficial to the state and useful to the Legislature.
 - Edit/write technical reports**
Water Use Efficiency in Agriculture is a legislatively mandated report. TP&CM edits and formats text, sometimes for multiple purposes or venues.
 - eNewsletters**
California Water Plan eNews, Project Management eNews, and Delta eNews are electronic newsletters produced and emailed weekly or monthly to more than 7,000 people in seven countries.
 - Newsletters**
The IEP Newsletter is a quarterly publication that provides IEP program and science highlights as well as in-depth articles on scientific topics.
 - Educational Presentations**
For the 4th Annual DWR GIS Day, TP&CM was asked to present recommendations for publishing maps.
 - Edit/format journal articles for review**
The Journal of Hydrology publishes articles submitted by DWR staff. TP&CM edits and formats articles following journal guidelines.
 - Outreach and guidelines**
The TP&CM intranet website links to guides and recommendations for publishing, editing, and graphics. Ask An Editor is a responsive forum for DWR employees.
 - Brochures**
CASGEM and CIMIS provide promotional and information brochures for meetings, conferences, and workshops.
 - Maps, tables, and figures**
Graphics are used on websites, in presentations, or as a part of report edits. TP&CM closely checks data and creates graphics that best portray the data.
 - Podcast production**
Podcasts feature interviews with leaders throughout DWR. They provide information and instruction to help department employees improve their project management skills.
- Division of Statewide Integrated Water Management
Project and Administrative Services Offices
Project Services Office
Patricia Cornelius
Carole Rains
Charlie Olivares
Frank Keeley
Marilee Talley
Mike Durant
Sarah Sol

Project Management Support

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Project Services and Cross-Cutting Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<ul style="list-style-type: none"> Facilitate and advance the use of professional, consistent, and standardized project management procedures, processes, and tools within DWR; Provide customized project management training for DWR executives, program managers, project managers, project team members, and staff; Develop and update Project Management Body of Knowledge based forms, templates, and dashboards to optimize project management and project tracking; Provide project management expertise and assistance for DWR programs. 			
Measurable Objectives	<ul style="list-style-type: none"> Implement, operate, and maintain Microsoft Project Server 2010 as Integrated Water Management's comprehensive software solution for project management; Conduct the six-day Project Management Applications Workshop, the one-day Project Management Framework Essentials for DWR Managers, and the project management components of the Management Development Program and Leadperson Workshop; Provide project management services throughout DWR via staff expertise and expert consultant capacity; Maintain and update the Project Services Office website; Explore implementation of a staff expertise database; Develop the DWR Project Management manual; Promote use of the DWR Project Status Dashboard. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners			Regulatory Agencies / Partners	
Operating Agencies / Partners			Land Use Agencies / Partners	
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input type="checkbox"/> Improve Administrative / Institutional Tools				
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	Communication is essential to effective Project Management. The Project Services Office provides tools to optimize project and program communications			
<input checked="" type="checkbox"/> Personnel Development	The Project Services Office develops the project management maturity of personnel and DWR as an organization through multiple training opportunities and outreach efforts.			

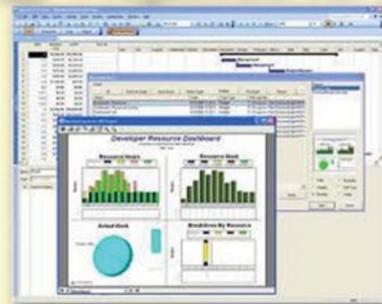
Milestone & Timeline					
Key External Milestone / Deliverable					Date (by Quarter / Year)
Complete Project Management Applications Workshop #13					Q1 2012
Complete Project Management Applications Workshop #14					Q2 2012
Configure Microsoft Project Server 2010 for the California Water Plan					Q2 2012
Create DWR Project Management Manual					Q2 2012
Complete project and program management assistance to Bay Delta Office Operations and Criteria Plan					Q2 2012
Complete project management assistance to Operations and Maintenance Safety Plan Project					Q2 2012
Complete Project Management Framework Essentials for DWR Managers #5					Q3 2012
Lead	Matt Nolberg	nolberg@water.ca.gov			
Website	https://pso.water.ca.gov/				
Key Program Information Materials	<input checked="" type="checkbox"/> Reports(s) / Brochure(s) / Fact Sheet(s)	Enterprise Process Guide Project Management 1: Using Project Management for Projects http://aquanet.water.ca.gov/mao/epgs/ds_projectmgmt/01_project_mgmt.pdf Project Management Templates https://pso.water.ca.gov/web/guest/project-management-templates;jsessionid=B4251381D41A17610B0E8FBB32AC28DE			
	<input checked="" type="checkbox"/> Multimedia	Project Status Dashboard https://pso.water.ca.gov/web/guest/project-dashboards Project Management Best Practices Project Management Institute - http://www.pmi.org/			
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities					
Public Meetings / Open Houses					
Interactive Workshops					
Standing Workgroups					
Other	Communication with external experts and public and private entities to expand Project Services Office project management body of knowledge				
Internal Coordination (11/12 only)					
Support From Other IWM Topics					
Support To Other IWM Topics	The Project Services Office through its Project Management Support program provides assistance to all IWM as well as to all DWR Divisions.				
Budget & Funding (in 1,000s)	11/12	12/13	13/14	14/15	15/16

PROJECT MANAGEMENT SUPPORT

Division of Statewide Integrated Water Management

Project Services Office—Mark Meeks, Chief

To facilitate and advance the use of professional, consistent, and standardized project management procedures, processes, and tools within DWR.



MICROSOFT PROJECT SERVER 2010

PSO will implement, operate, and maintain Microsoft Project Server 2010 as IRWM's project management software.

“Specific initiatives I would like to advance include using formal project management principles in carrying out more of the Department's work...”

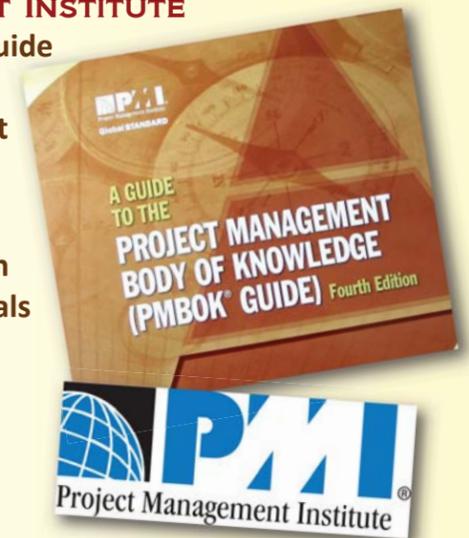
– Vision Statement from Director Cowin, February 2, 2010



PROJECT MANAGEMENT INSTITUTE

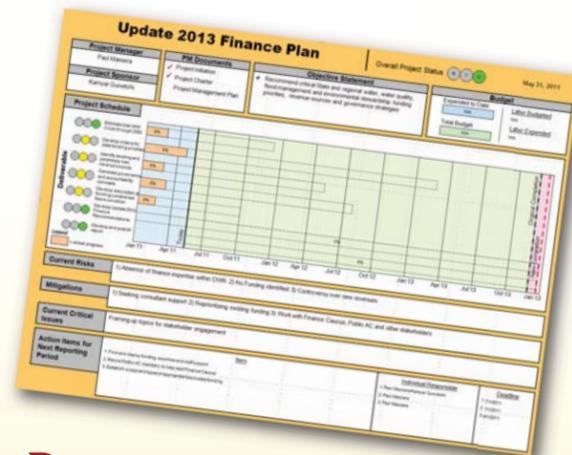
PSO utilizes PMI's PMBOK Guide as the foundation for the development of DWR project management policy.

PMI sets the standards that describe good practices, with globally recognized credentials that certify the expertise of PSO staff.



TEMPLATES

PSO created project management templates that provide essential guidance for project managers.



DASHBOARD

PSO created project and program dashboards provide easily assimilated visual updates for the project manager, project team, and executives.

PROJECT MANAGEMENT APPLICATIONS WORKSHOP

PSO has conducted multiple training workshops for project managers and executives. Over 240 project managers and 80 executive level staff have graduated from our workshops.



PROJECT MANAGEMENT AND COMMUNICATIONS SECTION

Matt Nolberg, Chief

Leticia Page

Millie Simmons

Darlene Griffin

Neli Khodamardi

Jonathan Duncan

Jacob Ingle

Bond Accountability

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Legislative, Budget & Communication			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	To facilitate development of the FloodSAFE Statewide System Investment Strategy and provide financial tracking and reporting resources that: <ul style="list-style-type: none"> Meet bond accountability reporting requirements from Executive Order S-02-07; Effectively manage bond funds available for all FloodSAFE programs; Support development of FloodSAFE program appropriation requests; Provide program and project updates to CA Natural Resources Agency, Department of Finance, and DWR Bond Accountability Office 			
Measurable Objectives	<ul style="list-style-type: none"> Manage Bond Expenditure Plan to meet FloodSAFE program funding needs Respond to CA Natural Resources Agency requests for upcoming bond sale cash proceeds Track and report FloodSAFE project expenditures on monthly basis Provide semi-annual program and project updates for Resource Agency's Bond Accountability website 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> CA Natural Resources Agency Department of Finance Department of Water Resources DWR Bond Accountability Office 				
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Standardize key business and fiscal reporting functions, ensure tracking and reporting requirements for bond-funded activities are being met			
Program Support Function				
<input checked="" type="checkbox"/> Fiscal	Coordinate fiscal tracking and management activities, develop tools to enhance program budget planning and expenditure reporting			
<input checked="" type="checkbox"/> Communication	Consistent reporting of bond program expenditures to multiple audiences			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Bond Expenditure Plan for 2012			Q1 2012				
Bond Accountability Website Winter Update			Q1 2012				
Bond Accountability Website Summer Update			Q3 2012				
Proposition 1E and Capital Outlay Legislative Report			Quarterly				
Lead	Eric Koch		ekoch@water.ca.gov				
Website	DFM Desk Reference, Bond Accountability section						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>Proposition 1E and Capital Outlay Legislative Quarterly Report, Bond Expenditure Plan, Semi-Annual Cash Flow Projections</i>					
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities							
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other							
Internal Coordination (11/12 only)							
Support From Other IWM Topics	<ul style="list-style-type: none"> All FloodSAFE programs 						
Support To Other IWM Topics	<ul style="list-style-type: none"> All FloodSAFE programs 						
Budget & Funding (in \$1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input checked="" type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
TOTAL FUNDING							

Division of Flood Management

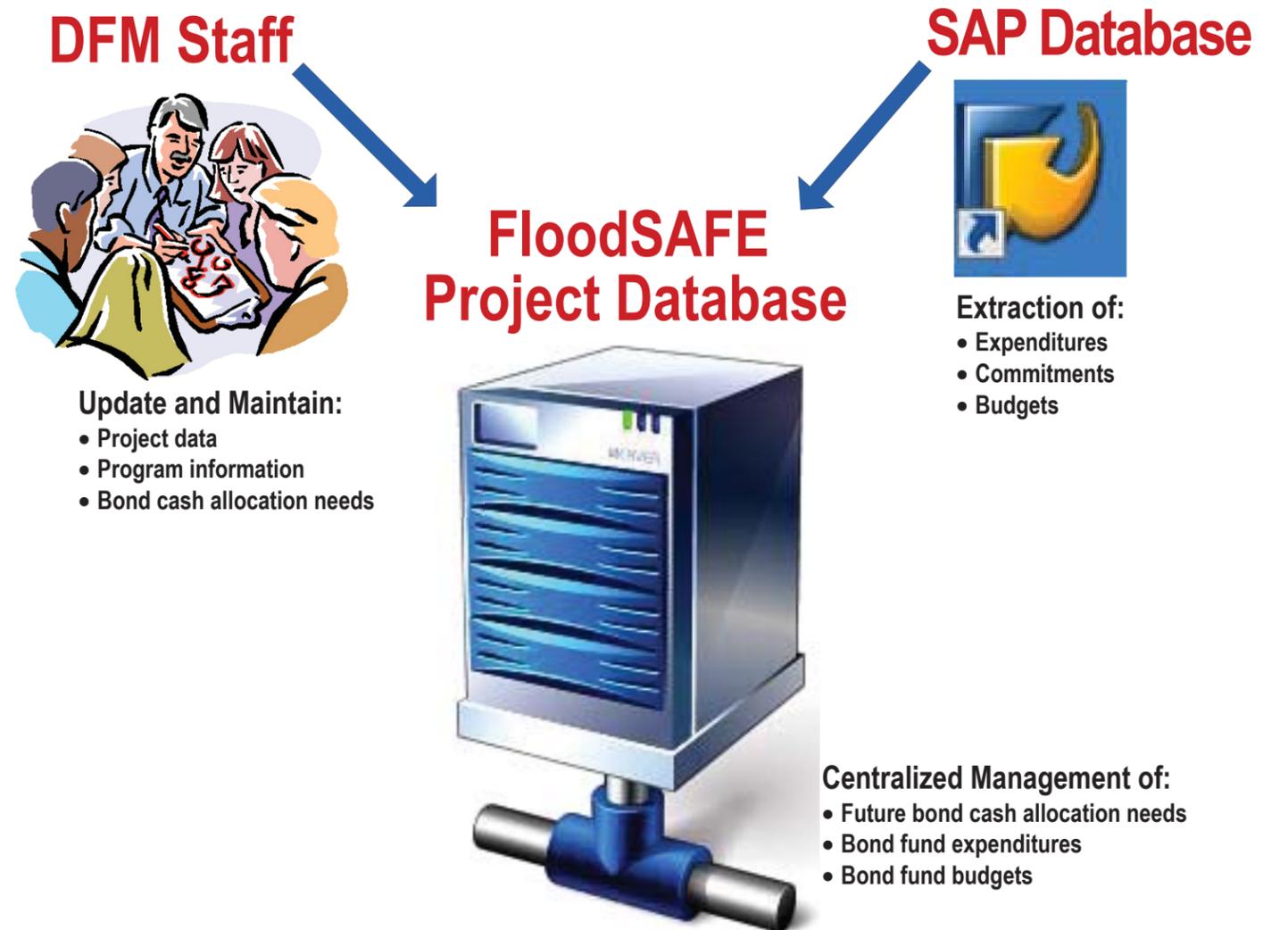
FloodSAFE Program Management Office

Bond Accountability

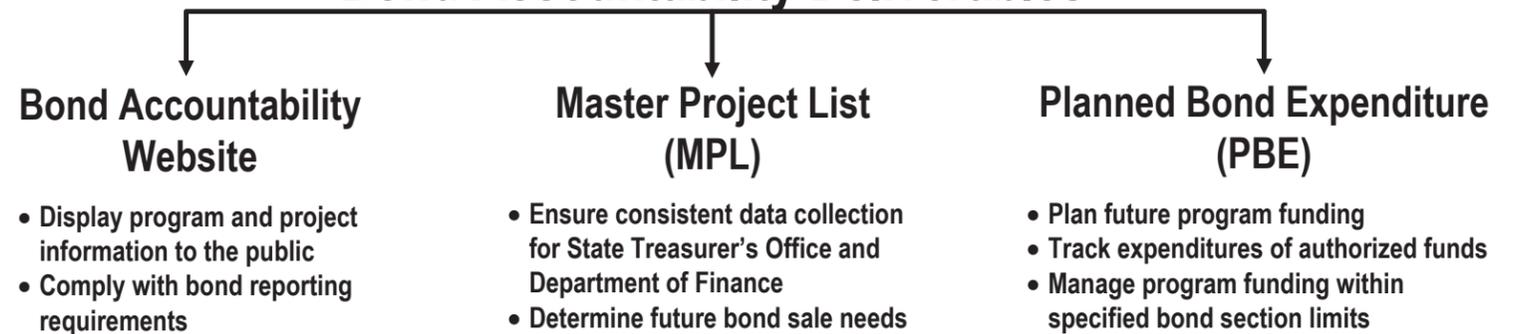
Eric Koch – Office Chief

FloodSAFE Project Database

- Meet Governor’s Executive Order S-02-07 bond accountability reporting requirement
- Effectively manage bond funds available for all FloodSAFE Programs
- Provide program updates to Department of Finance and Department of Water Resources’ Bond Accountability Office



Bond Accountability Deliverables



Bond Management System

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input type="checkbox"/> System		<input type="checkbox"/> Regional / Local	
Functional Area / Name	Project Services & Cross-Cutting Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>Implement an enterprise solution for managing bond-funded programs that accurately reports program outcomes to ensure transparency and accountability to the public.</p> <ul style="list-style-type: none"> Identify business requirements for tracking, managing, and reporting bond funded projects for Governor's Executive Order (S-02-07); Build and maintain a web based program and database to allow users to track and store project information; Evaluate new business requirements as needed; Develop and maintain proposition expenditure, invoice, contract, grant award, bond accountability and other project status reports Provide super user training to ensure staff can use BMS. 			
Measurable Objectives	<ul style="list-style-type: none"> Implement use of BMS to track all bond funded projects that are reported to Governor's Bond Accountability Website; Standardize reporting elements; Ensure reporting elements stored in BMS can be easily and accurately retrieved; and Train at least one staff from each bond funded program as a super user. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input type="checkbox"/> Reduce Water Demand				
<input type="checkbox"/> Improve Operational Efficiency & Transfers				
<input type="checkbox"/> Increase Water Supply				
<input type="checkbox"/> Improve Water Quality				
<input type="checkbox"/> Practice Resource Stewardship				
<input type="checkbox"/> Improve Flood Management				
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Provide a consistent, repeatable, and defensible bond process for accounting and managing Propositions 1E and 84 funds; meet mandatory reporting and bond accountability requirements as set forth in the Governor's Executive Order (S-02-07) ; and manage prior year and future bonds.			
Program Support Function				
<input checked="" type="checkbox"/> Fiscal	DWR staff can manage projects, contracts, and track expenditures in an electronic system accessible to staff. BMS sends out automated emails notifying clients about available funding; grantee can submit draft invoices for program review; allows for bond expenditure reporting.			
<input checked="" type="checkbox"/> Communication	Gives DWR users the ability to create online proposal solicitation packages; allows the public to submit proposals online; DWR staff can review applications for grants, analyze award options, and manage projects and contracts in one system.			
<input type="checkbox"/> Personnel Development				

Milestone & Timeline							
Key External Milestone / Deliverable			Date (by Quarter / Year)				
Business requirements gathering			Q2 2009				
Complete BMS design & build			Q2 2010				
BMS release (beta testing)			Q3 2010				
BMS release (public)			Q3 2010				
Critical bug fixes and workflow adjustments			Q1 2012				
Evaluate & incorporate new bond accountability reporting needs			Q3 2013				
Super User Training and individualized program training			On-going				
Lead	Leslie Pierce		lpierce@water.ca.gov				
Website	http://www.water.ca.gov/bms/ We also have an internal website for DWR staff access.						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	External User Guide, BMS Frequently Asked Questions, Training Guides and presentations					
	<input type="checkbox"/> Brochure(s)						
	<input type="checkbox"/> Fact Sheet(s)						
	<input type="checkbox"/> Multimedia(s)						
External Communication & Engagement Approach (11/12 only)							
Public Comment Opportunities	The public provides comments each time a Proposal Solicitation Package is open for applications.						
Public Meetings / Open Houses							
Interactive Workshops							
Standing Workgroups							
Other	BMS Help line (888) 907-4267 and bmsadmin@water.ca.gov						
Internal Coordination (11/12 only)							
Support From Other IWM Topics	Program and project staff maintain and update project bond information in BMS: Division of Flood Management, Division of Statewide Integrated Water Management, Division of Integrated Water Management, FESSRO, Bay-Delta Office. Bond Accountability provides input on new business requirements for bond reporting.						
Support To Other IWM Topics	BMS provides an enterprise platform for project, program, and contract managers to manage, track, and report on their projects. BMS also allows for online grant applications, reviewer evaluations, and awards.						
Budget & Funding (in 1,000s)			11/12	12/13	13/14	14/15	15/16
Forecasted Budget							
Expected Funding	<input type="checkbox"/> General Fund						
	<input type="checkbox"/> Bond (Prop 13)						
	<input type="checkbox"/> Bond (Prop 50)						
	<input checked="" type="checkbox"/> Bond (Prop 1E)						
	<input checked="" type="checkbox"/> Bond (Prop 84)						
	<input type="checkbox"/> Fees						
	<input type="checkbox"/> Reimbursable						
	<input type="checkbox"/> In-Kind Support						
	<input type="checkbox"/> Other						
	TOTAL FUNDING						

Bond Management System

Division of Statewide Integrated Water Management
 Project Services Office
 Bond Coordination and Support

- Leslie Pierce
- Joseph Chang
- Kristyne Van Skike
- Dennis Woods
- Linda Buchanan
- Millie Simmons
- Devinder Dhillon

BMS is a web based tool designed to assist Program Managers in managing bond funded projects. It facilitates meeting mandatory reporting and bond accountability requirements as set forth in the Governor's Executive Order S-02-07; and provides a consistent, repeatable, and defensible process for distributing and managing bond funds.

Give out Grants

- Use BMS to:
- Create online Proposal Solicitation Packages
 - Receive online applications from the Public
 - Complete an online PSP review process
 - Award grants

Manage Projects & Contracts

- Use BMS to:
- Track project progress with milestones and deliverable checklists
 - Track project and task expenditures for contracts and invoices
 - Store communications and documentation for an audit trail
 - Quickly see project and contract budget data pulled from SAP

Generate Reports

- Use BMS reports that show:
- Grants awarded
 - Bond Accountability Website fields
 - Legislatively mandated reporting requirements
 - All invoices submitted by project
 - Percent complete by project
 - Project deliverable status
 - And other user defined reports

Review and Process Invoices

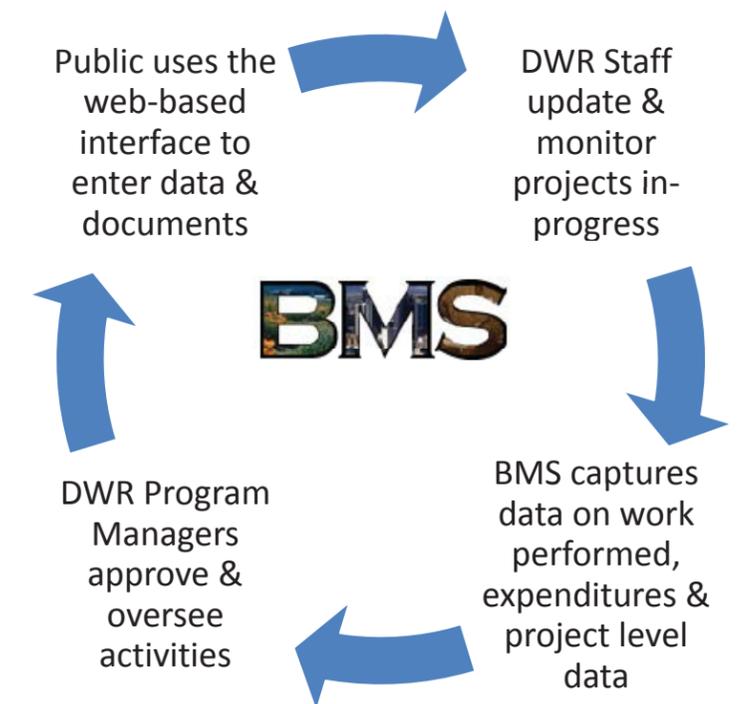
- Use BMS to:
- Review draft invoices from your contractor
 - Move electronic invoices through program defined review steps
 - Track invoice processing



Public User Guide (12MB)

NEW SOLICITATIONS			
11 New solicitations are available!			
MY APPLICATIONS			
In Progress	2		
Submitted	13		
Awarded	1		
YOUR ORGANIZATION'S ADMINISTRATOR IS:			
Organization Name	Administrator	Email	Phone Number
ABC Org	Linda	lindawu_us2001@yahoo.com	916 - 2141112

For information regarding the BMS please call (888) 907-4267 or email bmsadmin@water.ca.gov.



Climate Change

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Project Services & Cross-Cutting Programs			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input checked="" type="checkbox"/> Technical	<input checked="" type="checkbox"/> Implementation	<input checked="" type="checkbox"/> Integration
Scope	To save the planet, including: <ul style="list-style-type: none"> Adaptation of water management systems to climate change Reduction of DWR's and the California water sector's carbon footprint Research and data collection Public outreach 			
Measurable Objectives	<ul style="list-style-type: none"> DWR greenhouse gas (GHG) emissions inventoried, disclosed, reported, and independently verified annually ("Climate Action Leader" status) IRWM plans that substantively incorporate climate change DWR CEQA documents that substantively address climate change Completion of NRC Study on West Coast Sea Level Rise Presentations on climate change 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> Climate Action Team (CAT) Natural Resources Agency Governor's Office of Planning and Research 		<ul style="list-style-type: none"> Attorney General's Office Air Resources Board CalEPA 		
Operating Agencies / Partners		Land Use Agencies / Partners		
<ul style="list-style-type: none"> SWRCB DFG CDFA 		<ul style="list-style-type: none"> California Landscape Conservation Cooperative 		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	20x2020 program is a part of AB 32 Scoping Plan and is an adaptation strategy as well			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Climate change is a consideration in system reoperation studies; program funds paleohydrology study of the Klamath, Sacramento, and San Joaquin Rivers			
<input checked="" type="checkbox"/> Increase Water Supply	Climate change is a consideration in surface storage studies			
<input type="checkbox"/> Improve Water Quality	More focus needed on climate change impacts to water quality			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Ecosystem stewardship is a climate change adaptation strategy; program co-funds meadow restoration research			
<input type="checkbox"/> Improve Flood Management	More focus needed on climate change and flood management			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Secondary purpose of program is to cut across all DWR divisions and programs to improve intra-Departmental coordination, communication, and integration			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input checked="" type="checkbox"/> Communication	Program supports public outreach on water issues in California			
<input checked="" type="checkbox"/> Personnel Development	Program specifically builds technical capacity on climate change at DWR, not at consulting firms.			

Milestone & Timeline					
Key External Milestone / Deliverable			Date (by Quarter / Year)		
Climate Action Plan			Q1 2012		
Vulnerability and Assessment Studies (CEC PIER program)			Q2 2012		
NRC Sea Level Rise Study (OPC, CalTrans, CEC, SWRCB, USGS, USACE, NOAA, Oregon, Washington)			Q2 2012		
Climate Data White Paper			Q3 2012		
Climate Change Analysis Framework			Q4 2012		
Paleohydrology study			Q4 2013		
California Water Plan Update			Q4 2013		
Lead	Elissa Lynn		elynn@water.ca.gov		
Website	www.climatechange.water.ca.gov				
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	<i>Managing an Uncertain Future (2008)</i>			
	<input checked="" type="checkbox"/> Brochure(s)	<i>Climate Change Achievements (2010)</i>			
	<input checked="" type="checkbox"/> Fact Sheet(s)	<i>Climate Change Accomplishments (2010)</i>			
	<input checked="" type="checkbox"/> Multimedia(s)	<i>"A Climate of Change" (2009); "DWR Climate News" (ongoing)</i>			
External Communication & Engagement Approach (11/12 only)					
Public Comment Opportunities	California Water Plan, Climate Change Technical Advisory Group (CCTAG) and CAT				
Public Meetings / Open Houses	California Water Plan, CAT and CCTAG				
Interactive Workshops	<i>Climate Change Handbook for Regional Water Planning</i>				
Standing Workgroups	CCTAG				
Other	WETCAT (CAT Water-Energy Subgroup)				
Internal Coordination (11/12 only)					
Support From Other IWM Topics	<ul style="list-style-type: none"> Funding for program provided by Surface Storage, System Reoperation, and California Water Plan IRWM Program California State Climatologist 				
Support To Other IWM Topics	<ul style="list-style-type: none"> Climate Change Matrix Team C4 (CEQA Climate Change Committee) The Climate Hawks Climate Change Framework Workgroup Climate Change Data Workgroup 				
Budget & Funding (in 1,000s)			11/12	12/13	13/14
Forecasted Budget					
Expected Funding	<input type="checkbox"/> General Fund				
	<input type="checkbox"/> Bond (Prop 13)				
	<input type="checkbox"/> Bond (Prop 50)				
	<input type="checkbox"/> Bond (Prop 1E)				
	<input checked="" type="checkbox"/> Bond (Prop 84)				
	<input type="checkbox"/> Fees				
	<input type="checkbox"/> Reimbursable				
	<input type="checkbox"/> In-Kind Support				
	<input checked="" type="checkbox"/> AB 32 Administrative Fee				
	TOTAL FUNDING				



CLIMATE CHANGE

AT THE DEPARTMENT OF WATER RESOURCES

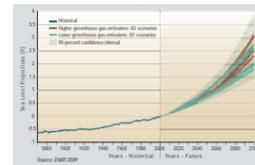
Climate change is already affecting California's water resources. Warmer temperatures, different patterns of precipitation and runoff, and rising sea levels increasingly affect the ability to manage water supplies and other natural resources. Adapting California's water management systems in response to climate change presents one of the most significant challenges for the 21st century.

In the course of the past five years, the California Department of Water Resources (DWR) has achieved a leadership role in both the mitigation of greenhouse gas (GHG) emissions and in positioning California to adapt to changes happening now and in the future.

Data Collection - Decision Making

Determining the impacts of climate change on the varying regions of the state requires that data about our environment be collected and analyzed in a consistent and comprehensive way. Improved data collection and a robust monitoring network will help identify trends, provide for better real-time system management, and help modify adaptation strategies going forward.

Developing more focused research on sea level rise and other variables can also help narrow the range of uncertainty in climate changes. In cooperation with numerous State and federal agencies, DWR is convening a panel of the National Research Council (NRC) to evaluate sea level rise issues and their impacts to California's coast, including estimation of a range of likely amounts of sea level rise in 2030, 2050, and 2100. The study is expected to kick off by September 2010 and conclude by June 2012.



Sea Level at Golden Gate

Sustainability

On Earth Day 2009, DWR adopted its first Sustainability Policy, forming the foundation of DWR's many "greening" activities. The policy articulates the goals and directions being taken to be a sustainability leader within State government and the California water community, better stewards of the environment, and to provide cost savings to the State taxpayers through reduced operating costs. An additional goal is to provide healthier work environments for staff and visitors.

DWR is the first State agency to participate in Sacramento Municipal Utility District's (SMUD) Carbon Offsets program. On Earth Day 2010, DWR announced its new partnership with SMUD, to offset the CO₂ emissions produced by natural gas consumption during its business operations.

DWR also participates in SMUD's Commercial Greenergy Program, whereby SMUD matches DWR's facility electricity needs with purchases from renewable resources for use on the SMUD power system. SMUD also commits to matching 40 percent of its revenue received from DWR with investments in new sources of renewable power generation.



DWR-SMUD Partnership

Regional Strategies

California lies within multiple climate zones, and thus each region of the state will experience unique impacts from climate change. Adaptation strategies must therefore be regionally appropriate. Integrated Regional Water Management (IRWM) provides a critical framework for actions to address the uncertainties presented by climate change, as well as other risks to California's water future. Water conservation reduces not only water demand but energy demand as well, which in turn can lead to reductions in GHG emissions.

DWR has incorporated climate change into the guidelines and proposal solicitation packages (PSPs) for the IRWM grant program. The guidelines address both adaptation to the effects of climate change and consideration of GHG emissions when selecting project alternatives. The Department has also developed an IRWM/Climate Change Clearinghouse of guidance documents to help IRWM applicants meet these new grant requirements. The IRWM Guidelines, PSPs, and Clearinghouse are available on the DWR website.



IRWM and Climate Change

Statewide Strategies

California's current water resource infrastructure is already strained to meet competing objectives, for water supply, flood control, ecosystem health, water quality, hydropower, and recreation. The current system of reservoirs, canals, floodplains, and levees must be modified and managed differently for greater flexibility during exacerbated droughts and floods. Flood systems must also be enhanced to accommodate higher variability of flood flow magnitude and frequency. Resolution of long-standing issues related to water management, ecosystems, water quality, and public safety in the Sacramento-San Joaquin Delta must also be addressed.



Central Valley Flood Protection Plan

DWR's Central Valley Flood Protection Plan, due by 2012, will explicitly consider climate change impacts to flood management. Key aspects will include ascertaining existing problems and expected future challenges, developing a checklist of climate change considerations, an inventory of related climate change projects and programs, and a new emphasis on environmental stewardship.

Climate Change and CEQA

In June 2009, DWR established a CEQA Climate Change Committee to review all climate change analyses in DWR environmental documents. Through these reviews the committee has developed environmental analysis methodologies and reference materials for use by Department staff and consultants. These guidance documents provide a consistent approach to conducting project specific environmental analyses for CEQA compliance documents, biological assessments, permit applications, and other environmental needs.

The Committee is now developing a programmatic approach—in the form of a Climate Action Plan—to address climate change across all DWR programs and projects, to comply with the CEQA Guideline Amendments recently adopted by the Natural Resources Agency. The Climate Action Plan will also help document Departmental compliance with AB32, set greenhouse gas reduction targets and reduction strategies; streamline environmental review; and demonstrate DWR's commitment to environmental stewardship, sustainability, and climate change mitigation and adaptation.



California Environmental Quality Act

State Water Project Power Policy

The electricity needed to operate the State Water Project (SWP) comes from DWR's own and jointly developed hydroelectric facilities, and power purchases. SWP's emissions-free hydropower is a renewable energy resource, making up an estimated 40 percent of the SWP's energy portfolio.

DWR is fully committed to reducing the emissions associated with SWP power purchases to meet California's Greenhouse Gas (GHG) reduction targets. Programs include replacing SWP's coal fired energy with cleaner resources (reducing CO₂e emissions by 1 million tonnes annually by mid-2013), increasing the energy efficiency of SWP hydroelectric equipment (avoiding 50 thousand tonnes CO₂e annually by 2010), and publicly reporting and verifying SWP annual emissions reductions.



SWP California Aqueduct

Acknowledgements: California DWR Climate Change Matrix Team, Elissa Lynn, editor, 2010.

**Sustainability Indicators Framework
(Water Plan – California Water Sustainability Indicators Framework)**

Focus Area (Primary Goal)	<input type="checkbox"/> Public Safety	<input type="checkbox"/> Water Management	<input type="checkbox"/> Environmental Stewardship	<input checked="" type="checkbox"/> Cross-Cutting
Geographic Scope	<input checked="" type="checkbox"/> System		<input checked="" type="checkbox"/> Regional / Local	
Functional Area / Name	Strategic Water Planning			
Internal Coordination Emphasis	<input type="checkbox"/> Residual Risk Management	<input type="checkbox"/> Technical	<input type="checkbox"/> Implementation	<input type="checkbox"/> Integration
Scope	<p>Help monitor progress to meeting water sustainability objectives through the development and application of an analysis framework. The framework also includes the development and evaluation of water footprint. The framework is being developed in collaboration with experts from UC Davis and U.S. EPA Region 9, and a wide array of stakeholders. The specific goals are:</p> <ul style="list-style-type: none"> • Develop analytical framework: develop water sustainability objectives, identify indicators and targets/desired future conditions, and describe analytical and interpretation methods. • Conduct quantitative analysis: conduct detailed Pilot for a relatively small area, and conduct high level Pilot for the ten hydrologic regions rolled up to the entire State. • Perform gap analysis: identify issues and identify data gaps. 			
Measurable Objectives	<ul style="list-style-type: none"> • Develop a vision for water sustainability for California - based on stakeholders input. • Develop water sustainability goals and objectives - based on the goals and objectives of California Water Plan Update 2009 and on-going activities of Water Plan Update 2013. • Develop analytic framework - identify relevant indicators, identify targets/desired future conditions, describe analytical and interpretation methods including distance to target methods, and describe reporting methods to assess indicator conditions and trends. • Conduct Pilot testing - apply the analytical framework using measured data to two specific regions of California to test and assess the utility of the Framework. • Conduct statewide water sustainability – apply the Framework to each hydrologic region of California for a region-wide and statewide assessment of water sustainability. • Evaluate water footprint - Calculate and evaluate water footprint for the state as a whole as well as for two focused regions. • Identify data gaps – that hamper computation and assessment of water sustainability indicators, including water footprint. 			
Key Agency & Partner Interaction				
Implementing Agencies / Partners		Regulatory Agencies / Partners		
<ul style="list-style-type: none"> • U.S. EPA • UC Davis • Delta Stewardship Council • Sustainable Water Resources Roundtable 		<ul style="list-style-type: none"> • Strategic Growth Council • Other federal, state, local agencies and academia 		
Operating Agencies / Partners		Land Use Agencies / Partners		
Resource Management Strategies to Address Goal & Objectives				
<input checked="" type="checkbox"/> Reduce Water Demand	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Improve Operational Efficiency & Transfers	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Increase Water Supply	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Improve Water Quality	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Practice Resource Stewardship	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Improve Flood Management	Identify and assess statewide/regional water sustainability indicators.			
<input checked="" type="checkbox"/> Improve Administrative / Institutional Tools	Expand collaboration among stakeholders to enhance consensus and consistency in the development and application of water sustainability indicators, including water footprint.			
Program Support Function				
<input type="checkbox"/> Fiscal				
<input type="checkbox"/> Communication				
<input type="checkbox"/> Personnel Development				

Milestone & Timeline						
Key External Milestone / Deliverable					Date (by Quarter / Year)	
Release revised California Water Sustainability Indicators Framework					Q1 2012	
Complete workplan for Water Sustainability Indicators and water footprint pilot studies					Q1 2012	
Begin collaborative pilot studies on Water Sustainability Indicators and water footprint					Q1 2012	
Preliminary pilot study results for two specific regions to test and assess the Framework					Q2 2012	
Preliminary pilot study results for hydrologic region-wide and statewide analysis					Q4 2012	
Final pilot study results					Q2 2013	
Final California Water Sustainability Indicators Framework					Q3 2013	
Lead	Abdul Khan	akhan@water.ca.gov				
Website						
Key Program Information Materials	<input checked="" type="checkbox"/> Report(s)	August 24, 2011 "CA Water Plan Update 2013 Sustainability Indicators Workshop" materials: http://www.waterplan.water.ca.gov/materials/2011.cfm http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/CWP_SIF_Draft_Framework_Jul20_11.pdf Dec 6/7, 2011 "Sustainable Water Resources Roundtable Meeting" materials: http://acwi.gov/swrr/p&p_library/dec6-2011_uc/index.html				
	<input checked="" type="checkbox"/> Brochure(s)	http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/WaterSustainabilityFramework_2Pager_Final.pdf				
	<input checked="" type="checkbox"/> Multimedia	http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/SustainabilityIndicators_Aug24Wksp_Presentation.pdf http://acwi.gov/swrr/p&p_library/dec6-2011_uc/Sustainability_indicators_shilling_1262011.pdf http://acwi.gov/swrr/p&p_library/dec6-2011_uc/Water_Footprint_Shilling_1272011.pdf				
External Communication & Engagement Approach (11/12 only)						
Public Comment Opportunities	Comment period for Water Plan Assumptions & Estimates Report May-Dec 2012					
Public Meetings / Open Houses	Water Plan State Agency Steering Committee and Public Advisory Committee meetings					
Interactive Workshops	Summer 2012 Statewide Water Analysis Network workshop					
Standing Workgroups	Water Plan "California Water Sustainability Indicators Framework" workgroups					
Other	Water Plan "Regional Forum" meetings; Sustainable Water Res. Roundtable meetings					
Internal Coordination (11/12 only)						
Support From Other IWM Topics	<ul style="list-style-type: none"> • Land & Water Use Data • Water Use Efficiency • Water Recycling and Desalination • Water Quality and Quantity 		<ul style="list-style-type: none"> • Surface Storage Investigations • System Reoperation • Statewide Water Analysis Network 			
Support To Other IWM Topics	<ul style="list-style-type: none"> • California Water Plan • IRWM Strategic Plan 		<ul style="list-style-type: none"> • Water Transfers • System Reoperation 			
Budget & Funding (in 1,000s)						
Forecasted Budget						
Expected Funding	<input type="checkbox"/> General Fund					
	<input type="checkbox"/> Bond (Prop 13)					
	<input type="checkbox"/> Bond (Prop 50)					
	<input type="checkbox"/> Bond (Prop 1E)					
	<input checked="" type="checkbox"/> Bond (Prop 84)					
	<input type="checkbox"/> Fees					
	<input checked="" type="checkbox"/> Reimbursable (U.S. EPA)					
	<input type="checkbox"/> In-Kind Support					
	<input type="checkbox"/> Project					
	TOTAL FUNDING					

For more information contact
 Abdul Khan
akhan@water.ca.gov (916)651-9660

http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/WaterSustainFramework_2Pager_Final.pdf
http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/SustainabilityIndicators_Aug24Wksp_Presentation.pdf
http://www.waterplan.water.ca.gov/docs/meeting_materials/workshop/08.24.11/CWP_SIF_Draft_Framework_Jul20_11.pdf
http://acwi.gov/swrr/p&p_library/dec6-2011_uc/Sustainability_indicators_shilling_1262011.pdf
http://acwi.gov/swrr/p&p_library/dec6-2011_uc/Water_Footprint_Shilling_1272011.pdf

California Water Sustainability Indicators Framework

Statewide Integrated Water Management
 Integrated Data & Analysis Branch

Help monitor progress to meeting water sustainability objectives through the development and application of an analytical framework. The framework also includes the development and valuation of water footprint. The framework is being developed in collaboration with experts from UC Davis and U.S. EPA Region 9, and a wide array of stakeholders.

Water sustainability for California is defined as the dynamic state of water management in the state that meets today's needs without compromising the long-term capacity of the natural and human aspects of the water system to meet the needs of future generations.

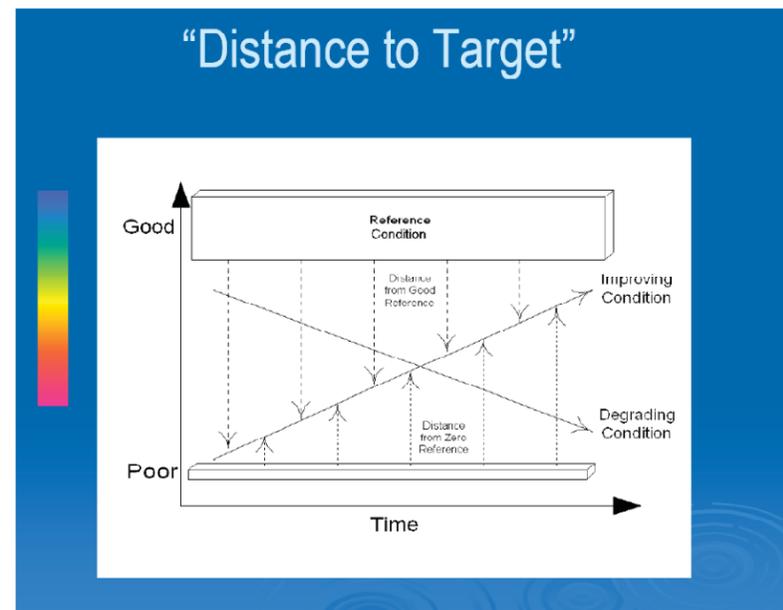
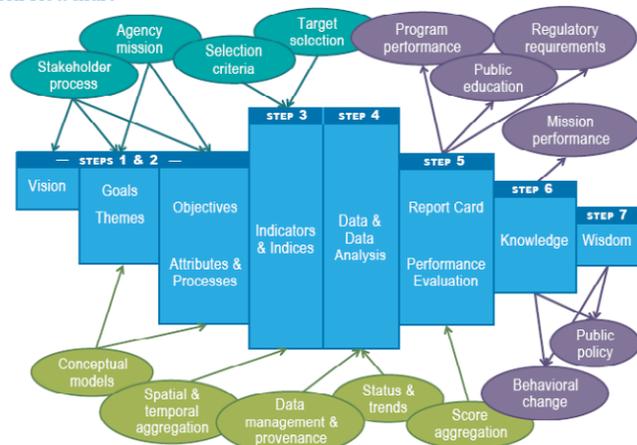
Deliverables:

- Analytical Framework
- Quantitative Analysis
- Gap Analysis

Process Steps



Framework Flowchart



The California Water Sustainability Indicator Framework is composed of a cycle of process steps that build upon each other

The analytical method employs a normalization technique that uses the concept of distance to target from two conditions: one, a desired future condition and the other, undesirable condition

Water Sustainability Indicators Framework
Water Sustainability Indicators Suite
 Other Indicators: Economy, Social Equity, Environment
 Water Footprint: 70% (farming: milk and other ingredients), 20% (meat making), 6% (fertilizers and pesticides), 4% (making our packaging)
 Identify areas where GRACF informs Water Planning

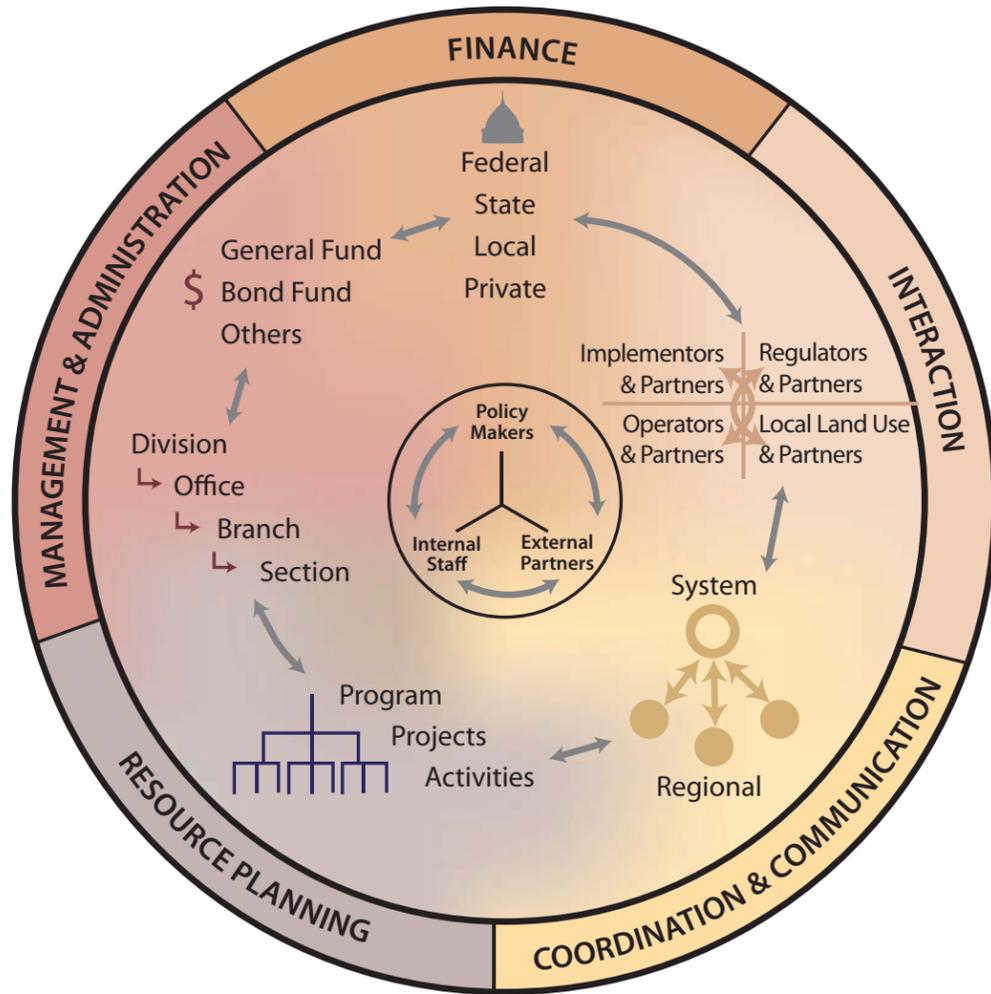
	Trend (mm/yr)	Volume lost (km³)
GRACE Total	-37	31.3
Water Storage	-	-
Snow	-	1.7
Surface Water	-9	7.6
Soil Moisture	-2	1.7
Groundwater	-24	20.3

 Summary screen will be presented with sub-pages containing graphics
 Identify connections between eco & water footprints that informs water planning
 Ecological Footprint: Ecological Footprint of Consumption by Land Use Type, Ecological Footprint and Biocapacity
 Identify areas where PGI confirms Eco footprinting
 Summary screen of footprints and biocapacity will be presented with drilldowns to underlying data and calculations
 Show similar chart for CA with sub-pages contain examples & discussion
 Plant Growth Index

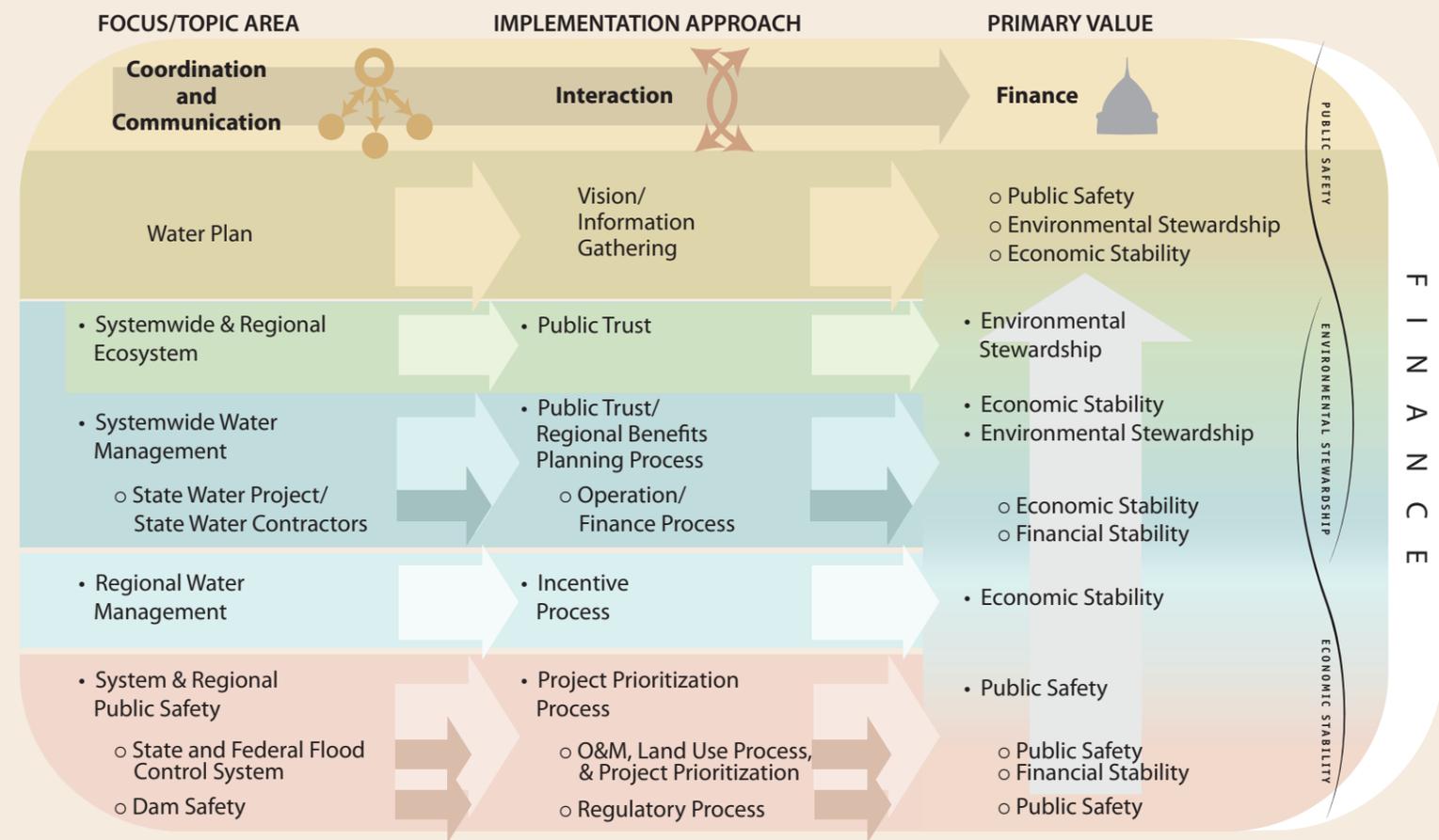
Water Sustainability Decision Support Tool is designed to support water management and policy decisions

Integrating Water Management

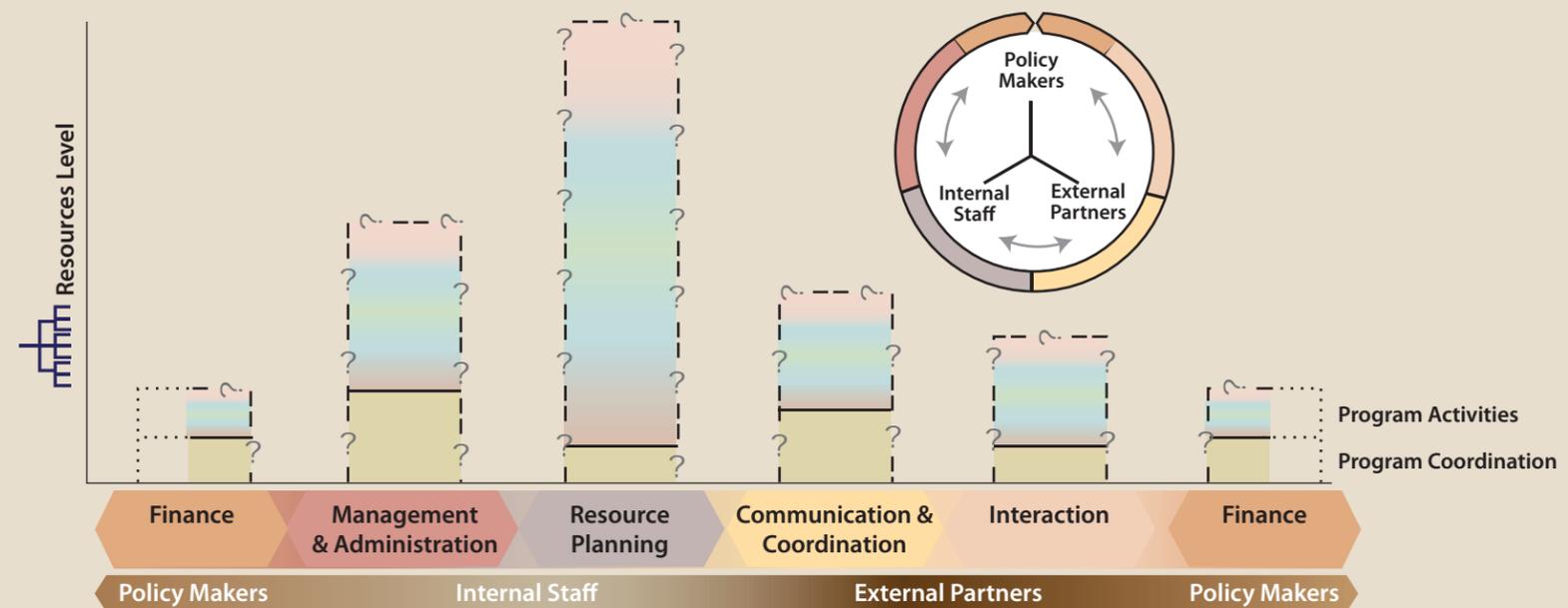
Internal-External Coordination



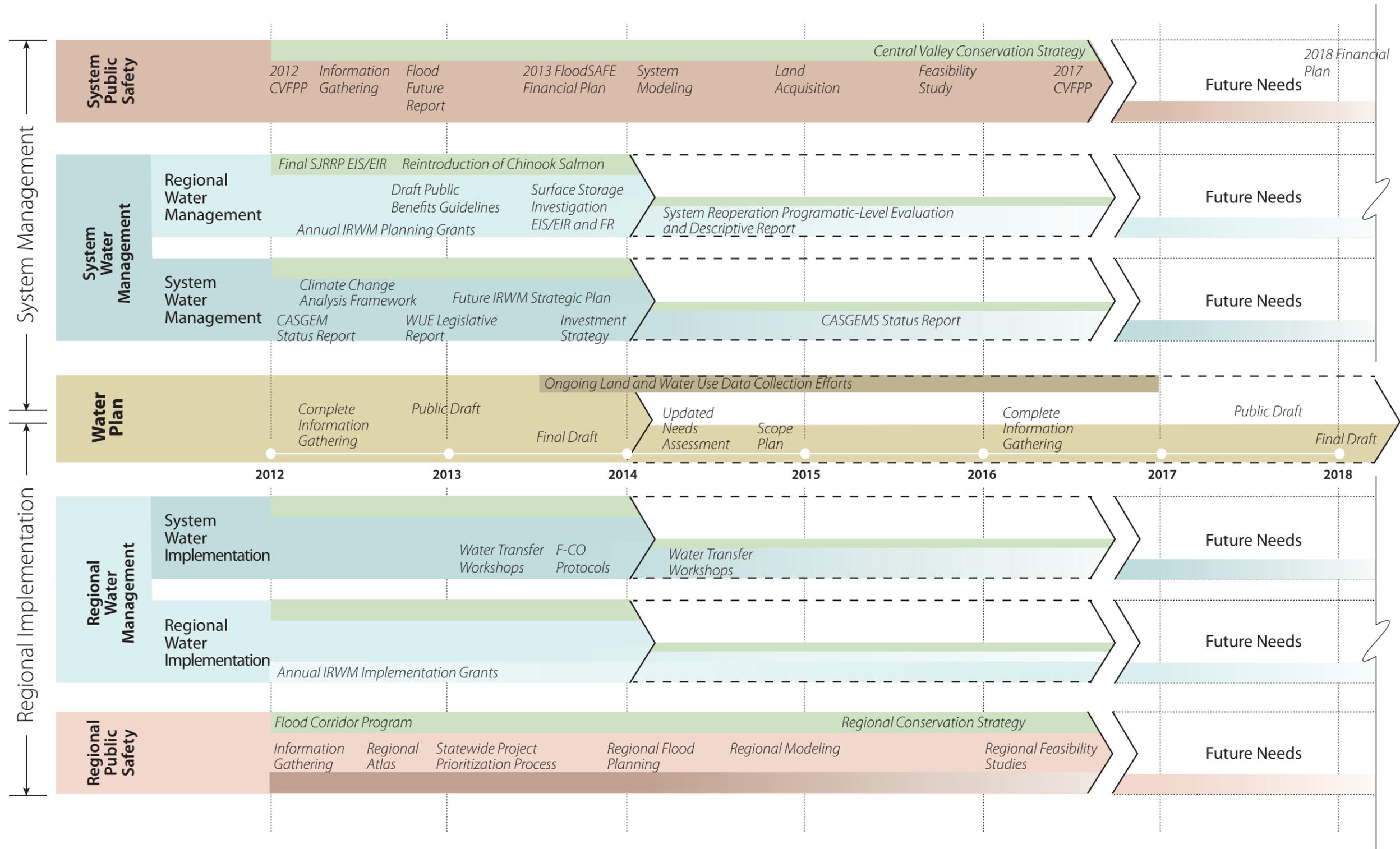
External Interaction



Implementation Resources



Integrating Water Management

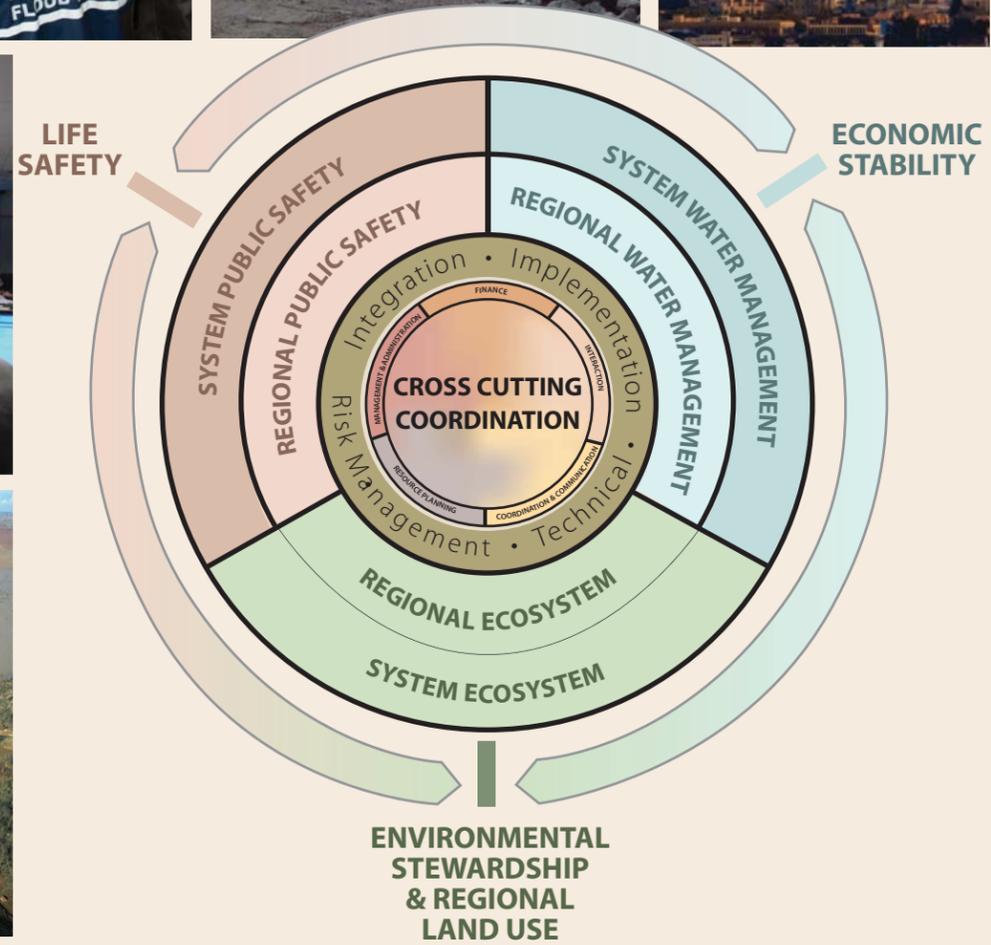
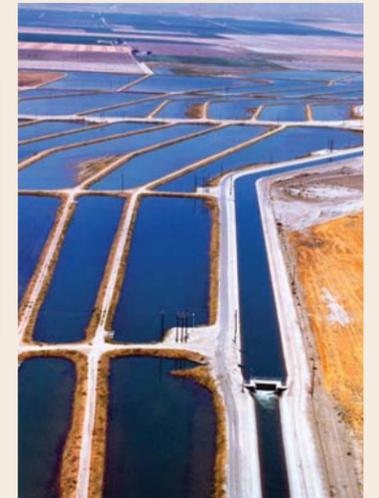


PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY





PUBLIC SAFETY

ENVIRONMENTAL STEWARDSHIP

ECONOMIC STABILITY

