

**REPORT OF ACTIVITIES
OF THE
DEPARTMENT OF WATER RESOURCES**

By

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FLOOD EMERGENCY RESPONSE (FLOOD ER)

Flood ER prepares for and responds to flood threats in close coordination with local, state, and federal entities. Preparing for flood response requires continuous data collection, regular flood system inspections and evaluations, forecasts and information dissemination, annual training and exercises, review and replenishment of supplies and equipment, and preseason coordination.

REAL-TIME FLOOD CONDITIONS, STATUS, & WARNING

The purpose of the Real Time Flood Conditions, Status, and Warning element is to provide information needed to manage floods as they are occurring. This element supports flood operations by 1) inspecting, documenting, and assessing the integrity of the Sacramento and San Joaquin Flood Control Project levees, 2) storing and managing information so that it is accessible to flood managers and the general public, 3) providing emergency flood information and warnings based upon existing and forecasted conditions and field reports, and 4) developing information management tools to support emergency operations.

Staff continued to integrate levee vulnerability data into the Flood Emergency Response Information Exchange (FERIX) web portal. FERIX will allow flood emergency response managers to share and visualize both historic and real-time flood system data.

In September 2014, staff continued conducting the Annual Flood Project Hydraulic Conveyance Capacity Evaluation and Reporting work for supporting flood system status and integrity assessment; and, flood emergency response planning, preparedness, and operation. This effort also supports coordinated reservoir operations, forecasting, and issuing flood warning by providing updated existing hydraulic conveyance capacity information of the flood control system. Preliminary analyses using Central Valley Floodplain Evaluation and Delineation (CVFED) and Central Valley Hydrology Study (CVHS) models and data, as well as a preliminary draft annual report for this year are under quality assurance review and are expected to be completed during the upcoming flood season.

Staff continued to develop tools and applications with FERIX as the platform to integrate flood system hydrologic, hydraulic, topographic and mapping information developed from CVFED, CVHS, Alluvial Fan Floodplain Evaluation and Delineation (AFFED), California Statewide Hydrology (CSH) and Climate Variability Sensitivity Study (CVSS) to facilitate visualization and exchange of important system information and tools (data and models) for flood emergency response managers.

Staff continued to manage and disseminate CVFED model, data, and tools. This month staff processed three requests for data, and transferred a total of 311 Light Detection and Ranging (LIDAR) tiles and 451 tiles of Aerial Imagery. One request also included bathymetric and field survey data. One request was from the Department of Water Resources (DWR) and the other two were from outside public agencies. Approximately 108 GB of data were transferred covering a land area of approximately 280 square miles.

Inspections

Staff completed summer channel and structure inspections and will publish the inspection reports shortly. Staff is starting fall season levee inspections. An effort to conduct inspections of Designated Floodways has started and staff is in the process of setting up the program. Staff continues to work with Central Valley Flood Protection Board (Board) inspecting and coordinating encroachment permits. The Encroachment Permit database continues to be updated and levee alignments are being revised in coordination with the USACE to more accurately reflect actual alignments and to be used with a new levee mile calculator. A program to field-verify the levee log data continues with staff from the Division of Integrated Regional Water Management. Staff continues to coordinate with DWR, U.S. Army Corps of Engineers (USACE), Board, and LMAs in a number of venues and have been participating in meetings regarding rodent abatement, regional plans, and unacceptable vegetation, recently conducting briefings to the Board regarding efforts to update documentation of the flood control system.

HYDRO-CLIMATE DATA COLLECTION & PRECIPITATION/RUNOFF FORECASTING

This element supports Flood Emergency Response by providing information on current and forecasted water conditions, and by providing meteorological and climate information. Additionally, this element includes evaluating and improving the data collection and exchange network and forecasting models, providing water supply and watershed runoff information and forecasting, and the development of a new generation of forecasting and data collection tools to improve the quality, timeliness, and length of watershed and river forecasts. Real-time data, its timely availability, and quantities and quality are all critical to improving forecasting quality and timeliness.

As of August 31, statewide hydrologic conditions were as follows: precipitation, 55 percent of average to date, runoff, 35 percent of average to date, and reservoir storage, 60 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2014, observed through August 31, 2014 was about 7.2 million acre-feet (MAF), which is about 40 percent of average. In comparison to Water Year 2013, the observed Sacramento River Region unimpaired runoff through August 31, 2013 was about 11.9 MAF, or about 66 percent of average.

On August 31, the Northern Sierra 8-Station Precipitation Index Water Year total was 29.7 inches, which is about 60 percent of the seasonal average to date and 59 percent of an average water year (50.0 inches). During August, the total precipitation for the 8-Stations was 0.6 inches, or about 200 percent of average for the month. Last year on August 31, the Water Year 2013 seasonal total for the 8-Stations was 44.4 inches, or about 90 percent of average.

On August 31, the San Joaquin 5-Station Precipitation Index Water Year total was 19.6 inches, which is about 49 percent of the seasonal average to date and 48 percent of an average water year (40.8 inches). During August, the total precipitation for the 5-Stations was 0.0 inches. Last year on August 31, the Water Year 2013 seasonal total for the 5-Stations was 26.2 inches, or about 65 percent of average.

Selected Cities Precipitation Accumulation as of 08/31/2014 (National Weather Service Water Year: July through June)					
City	July 1 to Date 2013 – 2014 (in inches)	% Average	July 1 to Date 2012 – 2013 (in inches)	% Average	% Avg “Water Year” July 1 to June 30 2013 - 2014
Eureka	0.04	8	0.08	16	0
Redding	0.21	78	0.00	0	1
Sacramento	0.01	20	0.00	0	0
San Francisco	0.09	150	0.04	67	0
Fresno	0.01	50	0.00	0	0
Bakersfield	0.00	0	0.00	0	0
Los Angeles	0.17	213	0.03	38	1
San Diego	0.08	160	0.05	100	1

Key Reservoir Storage (1,000) AF) as of 08/31/2014								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	698	1,803	39	2,448	28	---	1,750
Shasta Lake	Sacramento	1,342	2,878	47	4,552	29	-3,210	3,210
Lake Oroville	Feather	1,100	2,318	47	3,538	31	-2,438	2,438
New Bullards Bar Res	Yuba	445	653	68	970	46	-521	521
Folsom Lake	American	381	611	62	977	39	-596	596
New Melones Res	Stanislaus	553	1,387	40	2,400	23	-1,867	1,867
Don Pedro Res	Tuolumne	820	1,436	57	2,030	40	-1,210	1,210
Lake McClure	Merced	159	564	28	1,032	15	-866	866
Millerton Lake	San Joaquin	229	236	97	520	44	-291	291
Pine Flat Res	Kings	114	378	30	1,000	11	-886	886
Isabella	Kern	54	216	25	568	9	-278	514
San Luis Res	(Offstream)	380	858	44	2,041	19	---	1,659

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for September 2014, issued August 31, 2014, suggests no tendency for above or below average rainfall for most of California. The exceptions are the extreme northern part of the state where below normal precipitation is indicated, and the extreme southeastern portion of the state where above normal precipitation is indicated.

RESERVOIR OPERATIONS & RIVER FORECASTING

This element supports Flood ER through a coordinated effort with various agencies operating reservoirs in the system to enhance reservoir operations. The goal of coordinated operation of the reservoirs will be to reduce peak flood flows downstream of the reservoirs. Additionally, this element supports Flood ER through river forecasting activities conducted in coordination with the National Weather Service River Forecast Center located at the Joint Operations Center in Sacramento. By conducting real-time and long-range hydrologic and watershed analyses, this element provides accurate and timely runoff and river peak flow forecasts.

In September 2014, staff continued managing the development of systemwide hydraulic channel routing models to support enhanced River Forecasting and Forecast Coordinated Reservoir Operations. The model developments for the Sacramento and San Joaquin River systems are 66% and 57% completed, respectively.

Staff continued developing the flood inundation map atlas and retrieval and display system. A series of levee breach scenarios and associated floodplain inundation extent and timing information are pre-run and stored in the Flood Inundation Map Atlas at 55 selected locations along Sacramento and San Joaquin River flood control projects. A retrieval and display system is being developed to enable easy and quick reference during a flood event, to a similar pre-run scenario from the Atlas. By September, 85% of the modeling and mapping effort is completed. It is expected the system will be implemented during the upcoming flood season.

Staff continued to populate and manage Library of Models (LOM) with CVHS and CVFED models to support River Forecasting and Forecast Coordinated Reservoir Operations to provide necessary flood intelligence during an event. LOM also supports the Central Valley hydrology update for risk assessment and project development. By September, 96% of the CVFED hydraulic models are populated in LOM. Completed CVHS watershed, reservoir and channel routing models are also being populated in LOM.

FLOOD EMERGENCY PREPAREDNESS & OPERATIONS

This element includes preparing DWR to respond to flood emergencies by providing emergency response training, flood fight training, coordinating emergency preparedness endeavors with the various flood response partners, analyzing season flood threats, and assuring the staffing and function of the State-Federal Flood Center to coordinate state response to flood events.

Statewide Emergency Response Grants

Staff continued to manage the 14 executed grant contracts with local agencies to improve their flood emergency response.

FLOOD MANAGEMENT PLANNING (FMP)

FMP formulates strategies, plans, and investment priorities for implementation of flood management projects and development of flood risk management policy. It includes the Statewide Flood Management Planning Program and the Central Valley Flood Management Planning Program, which developed California's Flood Future: Recommendations for Managing the State's Flood Risk (California's Flood Future) and the 2012 Central Valley Flood Protection Plan (CVFPP).

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING (CVFMP)

The CVFMP focuses on working with stakeholders to formulate plans for reducing flood risk and increasing the resiliency of the State Plan of Flood Control (SPFC). As recommended in the CVFPP, this program is currently implementing major planning efforts: locally led RFMP, which is working with more than 180 local entities to prepare regional flood management plans; state led Basin-wide Feasibility Studies (BWFS); the Central Valley Flood System Conservation Strategy (CS); and the CVFPP Financing Plan. Each of these planning efforts will inform the 2017 update of the CVFPP, the first five-year update as required by the California Water Code (CWC).

Two basin-wide feasibility studies, the Sacramento River Basin Feasibility Study and the San Joaquin River Basin Feasibility Study were initiated in September 2012. The Department has completed study Milestone 2, which includes the development of a draft array of system configurations based on study objectives and evaluations of individual system elements. The feasibility studies are currently in Phase 2, where the draft array of system configurations is being evaluated consistent with the State Systemwide Investment Approach (SSIA). The draft system configurations have been shared with regional representatives and will be further revised based on stakeholder input and preliminary technical evaluations currently underway.

Phase 2 will culminate in mid-2016 along with the final basin-wide feasibility reports. The Regional Flood Management Plan (RFMP) Reports and CS are being used to guide formulation of potential ecosystem features associated with flood improvements. The Central Valley Flood Planning Office (CVFPO) is coordinating with both the RFMPs and NGOs in an iterative planning process that will further refine potential multiple-benefit opportunities within the expanded footprints of the system configurations. The next milestone for the BWFS is the selection and recommendation of a State Preferred Plan in each basin, which is scheduled for early 2015.

DWR released *Guidance on General Plan amendments for Addressing Flood Risk* (Guidance). This document will assist cities and counties in the Sacramento-San Joaquin Valley to comply with the general plan amendment requirements per California Government Code Section 65302.9. As part of DWR's technical assistance, the Guidance is intended as an advisory resource for consideration by cities and counties in amending their general plan. This Guidance serves as an extension of the 2010 DWR's award-winning effort, *Implementing California Flood Legislation into Local Land Use Planning: A Handbook for Local Communities* *Local Communities Handbook* to provide updated information on legislative requirements on state's efforts in regional and statewide flood risk management since 2010.

The communication and engagement for BWFS continues to leverage existing venues and opportunities, including the Board's Coordinating Committee, venues established by RFMP efforts, informal meetings, and other processes. Work groups and other venues will be established as necessary, in collaboration with the Board.

CONSERVATION STRATEGY

The Central Valley Flood Protection Act of 2008 directs DWR to achieve multiple objectives through implementation of the CVFPP. Among these are environmental objectives to improve natural dynamic hydrologic and geomorphic processes; habitat quantity, diversity, and connectivity; and native species populations. The CS describes DWR's approach for achieving these objectives. It outlines actions to improve programmatic environmental permitting, provide advance mitigation for flood projects, improve systemwide vegetation management, integrate environmental stewardship into multi-benefit flood improvement projects, promote agricultural stewardship, and improve the quality of scientific and planning information needed for wise decision making.

Conservation Strategy Document

Staff received comments on the *Administrative Draft Conservation Strategy* at the end of August. Staff is addressing comments on both the document and appendices. Appendix D (vegetation management) was posted for Interagency Advisory Committee (IAC) review and responses are pending. Revisions to the document will be completed in time for release of a Public Draft to the Board in December.

Measureable Objectives Technical Memorandum

The Conservation Strategy Measurable Objectives Advisory Workgroup initiated work with a planning meeting to review a charter and methods. The meeting was well attended by IAC member agencies, conservation groups, and regional flood management representatives. It is anticipated that the information developed during this process will also provide a technical foundation for a Board chartered Advisory Committee initiated at the Board Meeting on September 26th.

Advance Mitigation Projects

Three Rivers Levee Improvement Authority (TRLIA) Feather River Floodway Corridor Restoration Project: DGS approved the TRILA Advance Mitigation contract. This project will enhance riparian vegetation and benefit salmonid on a parcel of land within the Feather River setback area. This will provide mitigation credits for flood management projects consistent with the SSIA.

Staff continued to participate in BWFS and RFMP related meetings and fund additional modeling and scientific work to support integration of the CS into state and regional planning efforts and potential multi-benefit flood projects.

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING (SIFMP)

Statewide Integrated Flood Management Planning (SIFMP) has identified flood risks facing Californians and proposed solutions to manage the risks. Working closely with USACE and more than 140 public agencies, SIFMP compiled comprehensive information about exposure to flood risk in each of California's counties, and about specific projects and associated costs that local agencies are planning to implement to reduce flood risks to their communities. Using this information, SIFMP presented recommendations to improve flood management in a comprehensive report titled California's Flood Future: Recommendations for Managing the State's Flood Risk. The report identified that more than 7 million Californians, or one in five, live within a 500-year level of flood risk floodplain, and approximately \$580 billion in assets (crops, structures, and public infrastructure) are exposed to flooding. This estimate does not include the impacts of future development, population change, climate change, costs due to loss of major infrastructure and critical facilities, or losses to commerce. The impact of a major flood would be devastating to California and the nation.

Information developed for *California's Flood Future* was used to create flood management content for the 2013 update of the *California Water Plan*. Currently, the SIFMP program is working to further define ways to implement the *California's Flood Future* recommendations. A primary focus is on development of funding strategies for flood risk management throughout California within the context of overall water management investment. A report is being developed that will describe the state investment priorities and finance options necessary to support the programs and projects that help improve flood management and reduce residual flood risk, as detailed in *Action 8* of the *California Water Action Plan*, with a draft to be produced in January 2015. The program has recently wrapped up an information gathering effort, in which approximately 240 flood and other water management agencies were interviewed.

FLOODPLAIN RISK MANAGEMENT (FRM)

FRM promotes prudent management of floodplains to reduce flood risks by working closely with local governments and federal agencies including the Federal Emergency Management Agency (FEMA) and USACE. Policies, guidance documents, and technical products are developed to guide actions taken in floodplains. An important program of successful floodplain risk management includes educating the general public about flood risks so they can plan, prepare, and take individual actions to reduce flood risk for themselves, families, and property.

CALIFORNIA FLOODPLAIN RISK MANAGEMENT (CFRM)

The CFRM works with individuals, communities, and professionals to reduce the risk of flooding. It is a comprehensive integrated program that preserves and enhances the natural and beneficial functions of floodplains, and identifies opportunities to minimize the impacts of flooding. The goal of CFRM is to reduce the frequency and severity of flood loss, loss of life, damage to property, and damage to the natural resources of floodplains. One of the basic foundations of CFRM is the identification and delineation of flood hazard areas within the state. This program promotes awareness of flood risks through risk assessment and risk mapping; the community assistance program; Flood Risk Notification (FRN); floodplain management mitigation planning; and mitigation cost recovery.

Floodplain Management Assistance

No new information this month.

Flood Risk Notification

No new information this month.

Coastal Floodplain Evaluation and Planning

No new information this month.

CENTRAL VALLEY FLOODPLAIN EVALUATION AND DELINEATION (CVFED)

The CVFED is tasked with obtaining new physical data and developing analytical tools and other work products such as topography acquisition, riverine and overland flow hydraulic models, and floodplain delineation maps. The project will develop datasets and tools allowing state, federal, and local entities to use CVFED developed models or develop new models using CVFED datasets for integrated flood management of the Central Valley's primary rivers and streams.

Staff continued to develop tools and applications with FERIX as the platform to integrate flood system hydrologic, hydraulic, topographic and mapping information developed from CVFED, CVHS, Alluvial Fan Floodplain Evaluation and Delineation (AFFED), California Statewide Hydrology (CSH) and Climate Variability Sensitivity Study (CVSS) to facilitate visualization and exchange of important system information and tools (data and models) for flood emergency response managers.

Staff continued to manage and disseminate CVFED model, data, and tools. This month staff processed three requests for data, and transferred a total of 311 Light Detection and Ranging (LIDAR) tiles and 451 tiles of Aerial Imagery. One request also included bathymetric and field survey data. One request was from the Department of Water Resources (DWR) and the other two were from outside public agencies. Approximately 108 GB of data were transferred covering a land area of approximately 280 square miles.

FLOOD RISK REDUCTION PROJECTS (FRRP)

FRRP works in coordination with local and federal agencies to implement new flood projects; provide funding that enables local agencies to repair and improve levees and other flood management facilities statewide; provide advanced mitigation for the SPFC to aid project delivery; and enhance ecosystems associated with the flood system. A primary responsibility of this program is to work closely with USACE.

DELTA FLOOD PROJECTS

This is a grants program that works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta, including water supply, habitat, and wildlife. The program, through its two major components of Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects, works with the local agencies to maintain, plan, and complete levee rehabilitation projects. One of the requirements to qualify for available funds is for the project to result in no net loss of Delta habitat.

Delta Levees Maintenance Subvention Program

This is a cost-share program providing financial assistance to local agencies for maintenance, rehabilitation, and improvement of approximately 700 miles of project and non-project levees. Due to the public-private partnership nature of this program, it provides significant improvement to critical levees at a very reasonable cost. Staff, on behalf of the Board initiates and manages work agreements to fund levee maintenance and rehabilitation. The current status of work agreements is as follows:

Work Agreements for FY 2012-2013

The Board's Executive Officer executed 65 work agreements.

- Staff received 60 final claims by the November 1, 2013 deadline totaling approximately \$12 million in work.
- Staff conducted 60 joint levee inspections with the California Department of Fish and Wildlife and local agencies.
- Claims are being reviewed for eligibility and completeness. The eligible amounts will be reimbursed to the local agencies after the review.
- Staff completed the reimbursement process for 60 final claims, totaling approximately \$8.4 million in reimbursements.

Work Agreements for FY 2013-2014

- On September 13, 2013, the Board approved the FY 2013-14 funding plan for \$12 million.
- The Board's Executive Officer executed 68 work agreements.
- Final claims for work completed July 1st through June 30th are due to DWR by November 1, 2014.

Work Agreements for FY 2014-2015

- Staff received applications from 68 local agencies to participate in the FY 2014-2015 Subventions Program.
- Staff will review the applications and prepare a funding allocation plan for Board approval.

DELTA LEVEES SPECIAL FLOOD CONTROL PROJECTS

No new information this month.

DELTA LEVEE SYSTEM INTEGRITY (DLSI)

This program focuses on levee repair, maintenance, and improvement within the Sacramento-San Joaquin Delta. Funding is also available for planning, research, and habitat enhancement. The program includes the following components:

Delta Stewardship Council (DSC) Interagency Agreement (IA)

The DSC IA funds the Delta Levees Investment Prioritization Study. August is the month that work began in earnest on the tasks outlined in the IA; though the contract between ARCADIS and the DSC to complete the work described in the IA was signed in June, it took most of July for ARCADIS to have all of their subcontractors in place. Data transfers between DWR and ARCADIS have been begun. The DSC is working to develop the Independent Peer Review Process as required by the IA. The current schedule for the peer review is April 2015. Other areas that are in development are the role that California Environmental Quality Act (CEQA) will play in this study and the Quality Management Plan. An Interagency Group team consisting of DWR, Delta Protection Commission (DPC), DSC and Board staff met in August and will continue to meet monthly to confer and coordinate on relevant issues.

Delta Protection Commission (DPC) Interagency Agreement (IA)

The DPC IA funds the study to investigate the feasibility of a statewide assessment district for the Delta. The DPC is currently drafting their Request for Proposal (RFP). The Commission hopes to release the RFP in September and to award the contract at its November meeting.

USACE/BOARD PROJECTS

The Central Valley Flood Protection Board participates with the United States Army Corps of Engineers (USACE) to ensure that state flood management needs and mandates are met, and provides required non-federal cost-share funds and technical assistance to repair or upgrade the Central Valley's flood management systems. These congressionally authorized State Plan of Flood Control (SPFC) projects are being constructed to improve flood protection for urban or urbanizing areas to a 200-year level of flood protection; reduce flood risk in rural areas; reduce the risk to life, infrastructure, and property; and reduce the state's liability. The following are USACE/Board projects:

American River Common Features (ARCF) Project

The ARCF project improves levee systems along the American and Sacramento Rivers.

- Construction of the Natomas East Main Drainage Canal (NEMDC) North, R7, L5A, L10, R3A, and Jacob Lane (Reach C) sites are in progress.
- For Sites L7 and R7, a recirculated environmental assessment/initial study with subsequent mitigated negative declaration (MND) was released for public comment on August 8, 2014, that includes design changes, night work, and traffic control. A public workshop was held on August 26, 2014. Comments were accepted from August 8 through September 8, 2014. The BOARD will consider adopting the MND and approving the design changes at the October 24, 2014, Board meeting.
- Construction of sites L7 and Mayhew are scheduled to start in fall 2014.
- The NEMDC Extension site construction is scheduled for summer 2015.

American River Watershed – Natomas Basin Project

The Natomas Basin Project was approved by President Obama via the Water Resources Restoration and Development Act on June 10, 2014. It includes significant improvements to the Natomas Basin levees resulting in a 200-year level of flood protection for the basin.

USACE and DWR staff began discussions regarding a preliminary draft of a crediting package for the Natomas Cross Canal, Phase 1, valued at approximately \$23 million. Approved credit will be used in lieu of cash contributions by DWR and the Sacramento Area Flood Control Agency (SAFCA) for the required non-federal contribution toward upcoming construction work. USACE has also proposed a modification to the existing design agreement to accommodate additional federal and non-federal funding, and to include both the state and SAFCA as non-federal sponsors for the design agreement.

Folsom Dam Modifications Joint Federal Project (JFP)

The purpose of the JFP is to construct an auxiliary spillway at Folsom Dam that will work in conjunction with the existing spillways to help the Sacramento region achieve a 200-year level of flood protection. The estimated construction completion date is October 2017.

- Construction and Design – The project status as of September 1, 2014, is as follows:

Phases	Planning & Design	Construction
Preconstruction Engineering and Design	100%	N/A
Phase III – Control Structure	100%	83%
Phase IV – Approach Channel, Chute, and Stilling Basin	100%	31%
Phase V – Site Restoration	32.4%	0%
Project Overall	91.4%	52%

- Phase III – Control Structure: The current work is focused on installing the tainter gates. Phase III completion is scheduled for June 2015.
- Phase IV – Blasting and excavation in the area between the secant pile cutoff wall and the control structure continues. The downstream concrete work for the chute and stilling basin is on-going.
- A draft supplemental environmental document for the “Folsom Dam Safety and Flood Damage Reduction – Right Bank Stabilization” was circulated for a 45-day public comment period from July 18 through Sept 2, 2014. This document will go before BOARD for certification during the October 24, 2014, Board meeting.

Folsom Dam Raise Project

No new information this month.

Lake Kaweah Enlargement Project (Terminus Dam, Kaweah River Project)

No new information this month.

Marysville Ring Levee Improvement Project

No new information this month.

South Sacramento County Streams Project

This project will increase flood protection for a portion of south Sacramento County’s urbanized area, and an area to the southeast of the City of Sacramento.

Final real estate discussions are continuing as complications have developed in negotiations with owners over real estate and/or easements that are needed for the Florin Creek flood control improvements project. DWR real estate, geodetic, management, and attorneys have been engaged with property owners, SAFCA, and USACE to finalize the necessary rights for construction of the Florin Creek project. The construction contract award will likely be in October or November 2014.

USACE/BOARD STUDIES

The Board participates with USACE to ensure that state flood management needs and mandates are met, and provides required non-federal cost share funds and technical assistance for studies to repair or upgrade the Central Valley’s flood management systems. These studies identify recommended project alternatives that lead to congressionally authorized projects. These multi-benefit projects will improve flood protection for urban or urbanizing areas; reduce flood risk in rural areas that are protected by the facilities of the SPFC; reduce the risk to life, infrastructure, and property; and reduce the state’s liability. The following are USACE/BOARD studies:

American River Common Features (ARCF) General Re-evaluation Report (GRR)

No new information this month.

Central Valley Integrated Flood Management Study

No new information this month.

Cache Creek Settling Basin Project GRR

No new information this month.

Lower San Joaquin River Feasibility Study

No new information this month.

Merced County Streams Project – Bear Creek GRR

This project will evaluate alternatives to improve the Merced urban areas' flood protection to a 200-year level of flood protection.

USACE and DWR are developing a feasibility cost share agreement (FCSA) for the Merced County Streams Project and Black Rascal Creek Diversion improvements. The study is planned to begin in federal fiscal year 2015-16, after federal funding is approved.

Sutter Basin Feasibility Study

No new information this month.

West Sacramento Project GRR

No new information this month.

Woodland/Lower Cache Creek Feasibility Study

This study is a USACE, DWR, and City of Woodland coordinated effort to investigate feasible flood risk reduction alternatives and opportunities for floodplain restoration, recreational enhancements, and ecosystem restoration for the City of Woodland and surrounding areas. The study will continue efforts initiated during the original study, which was suspended in 2004 due to significant local resistance to the USACE-selected flood barrier alternative.

The federal government recently approved a continuing resolution to fund this project in the absence of an approved budget, through December 11, 2014. USACE confirmed that continuing resolution funding for the study will be available.

Yuba River Basin Project GRR

No new information this month.

URBAN FLOOD RISK REDUCTION PROGRAM (UFRR)

This program was created to address state investment priorities as a result of the adoption of the CVFPP. UFRR supports implementation of regional flood damage reduction projects for urban and urbanizing areas protected by SPFC facilities in the Sacramento-San Joaquin Valley to achieve at least a 200-year level of flood protection. UFRR provides cost-share funding to local agencies to repair and improve levees and facilities of the SPFC. UFRR is based on competitively awarded grants and directed funding. Projects must be multi-benefit flood projects consistent

with the CVFPP and State Systemwide Investment Approach. The program evolved from the Early Implementation Program (EIP) developed in 2007 in response to the passage of Propositions 1E and 84. The following projects were funded through EIP:

Knights Landing Levee Repair Project

No new information this month.

Levee District 1, Sutter County (LD-1 Sutter) – Setback Levee at Star Bend Feather River

LD-1 Sutter constructed a 3,400 foot long setback levee at Star Bend near river mile 18 on the right bank of the Feather River to relieve a pinch point on the Feather River at Star Bend and provide increased flood protection for Yuba City.

This project is closed out and final payment has been processed.

Reclamation District 17 (RD-17 San Joaquin River) – 100-Year Seepage Area Project

No new information this month.

Three Rivers Levee Improvement Authority (TRLIA) – Feather River Levee Improvement Project

No new information this month.

TRLIA – Upper Yuba River Levee Improvement Project

No new information this month.

Sacramento Area Flood Control Agency (SAFCA) – Natomas Cross Canal Project

No new information this month.

SAFCA-Sacramento River East Levee Project

No new information this month.

San Joaquin Area Flood Control Agency (SJAFCFA) – Smith Canal Closure Structure

No new information this month.

West Sacramento Area Flood Control Agency (WSAFCA) – North and Southport Improvement Project

No new information this month.

Sutter Butte Flood Control Agency (SBFCA) – Feather River West Levee Project (FRWLP)

FRWLP repairs approximately 35 miles of levees along the west bank of the Feather River from the Thermalito Afterbay to the north end of Star Bend. This project includes construction of slurry walls and seepage berms to protect Gridley, Biggs, Live Oak, Yuba City, and parts of Sutter and Butte counties. FRWLP's highest priority segment is identified as Project Area C. DWR chose Project Area C for the first construction contract.

- A construction funding agreement amendment was approved by the Department of General Services on September 18, 2014. This amendment added construction of Project Areas B and D2 and \$57,803,791 to the existing construction funding agreement.
- SBFCA was granted a time variance by the BOARD to allow for construction to be completed during the month of November 2014. Once complete, this will be a total of 17.5 miles of slurry wall constructed in 2014 and 19 miles total for the project.

SMALL COMMUNITIES FLOOD RISK REDUCTION (SCFRR) PROGRAM

No new information this month.

FLOOD CORRIDOR PROGRAM (FCP)

No new information this month.

FLOOD CONTROL SUBVENTIONS PROGRAM (FCSP)

No new information this month.

LOCAL LEVEE ASSISTANCE PROGRAM (LLAP)

The LLAP was developed to help fund projects implemented by flood management agencies, mainly outside of the Sacramento-San Joaquin Delta. The goals of LLAP include minimizing flood risk; identifying deficiencies in flood control structures; and minimizing high flood insurance costs related to FEMA unaccredited levees.

Alameda County Zone 6 Lines B and C LOLE Project

This project is now complete and DWR is initiating project closeout procedures.

YUBA-FEATHER FLOOD PROTECTION PROGRAM

No new information this month.

LEVEE EVALUATIONS (NON-URBAN AND URBAN)

Levee Evaluations consists of urban levee evaluations (ULE) and non-urban levee evaluations (NULE). The program was developed to evaluate current levels of performance for SPFC levees and associated non-SPFC levees whose failure would flood areas protected by the SPFC. Information and data obtained under this effort will assist flood managers at federal, state, and local levels in understanding overall flood risks and support them to better manage those risks in areas of the Central Valley protected by the SPFC.

Urban levees provide protection to developed areas with a population of at least 10,000 people. ULE is evaluating 470 miles of levees in 27 study areas to determine if they meet defined urban geotechnical criteria and when not, identifying remedial measures and providing cost estimates to meet the urban criteria.

Non-urban levees provide protection to agricultural areas and developed areas with a population of at least 1,000 to less than 10,000 people. NULE is evaluating approximately 1,500

miles of levees in 22 study areas to determine if they meet defined non-urban geotechnical criteria at current design water surface elevations (USACE 1955/57 water surface profiles) When the criteria is not identified, remedial measures and cost estimates will be provided.

The overall status of the ULE program intermediate and final deliverables for the 27 urban levee study areas is shown in the table below:

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Geotechnical Evaluation Report (GER)
1	Chico	Done	Done	Done	Done	Draft Volume 1 and 2 in preparation
2	Marysville	Done	Done	Done	Done	Volume 1 Done; Print check Volume 2 in preparation
3	RD 784	Done	Done	Done	Done	Done
4	Feather River West Levee	Done	Done	Done	Done	Print Check Volume 1 in preparation; Draft Volume 2 in preparation
5	Sutter Bypass Wadsworth	Done	Done	Done	Done	Volume 1 Done; Draft Volume 2 in preparation
6	American River	Done	Done	Done	Done	Print Check Volume 1 and 2 in preparation
7	Sacramento River	Done	Done	Done	Done	Volume 1 Done; Draft Volume 2 under review by DWR, ICB, and Stakeholders
8	Davis	Done	Done	Done	Done	Draft 2 Volume 1 in preparation; Draft Volume 2 in preparation

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Geotechnical Evaluation Report (GER)
9	Woodland	Done	Done	Done	Done	Print Check Volume 1 in preparation; Draft Volume 2 in preparation
10	NEMDC East	Done	Done	Done	Done	Draft 2 Volume 1 in preparation
11	NEMDC West	Done	Done	Done	Done	Print check Volume 1 in preparation; Draft Volume 2 in preparation
12	Natomas North	Done	Done	Done	Done	Draft Volume 1 and 2 in preparation
13	Natomas South	Done	Done	Done	Done	Volume 1 Done; Draft Volume 2 under review by DWR, ICB, and Stakeholders
14	West Sacramento	Done	Done	Done	Done	Done
15	Southwest Sacramento River [DWSC]	Done	N/A	N/A	Done	Final in preparation; Draft Volume 2 under review by DWR, ICB, and Stakeholders
16	South Sac Streams	Done	N/A	Done	Done	Draft Volume 1 in preparation
17	RD 404	Done	Done	Done	Done	Volume 1 Done; draft 2 Volume 2 under review by DWR, ICB, and Stakeholders
18	RD 17	Done	Done	Done	Done	Draft 2 Volume 1 in preparation

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Geotechnical Evaluation Report (GER)
19	Bear Creek	Done	Done	Done	Done	Print check Volume 1 in preparation; Draft Volume 2 in preparation
20	Calaveras River	Done	Done	Done	Done	Draft 2 Volume 1 in preparation
21	Lincoln Village	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation
22	Brookside	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation
23	Rough and Ready	Done	N/A	N/A	Draft GDR under review by DWR	Draft Volumes 1 and 2 in preparation
24	Boggs Tract	Done	N/A	N/A	Final GDR in preparation	Draft 2 Volume 1 in preparation; Draft 1 Volume 2 in preparation
25	Shima Tract	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation
26	Smith Canal	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation
27	Walthall Slough	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation
28	Bear Creek Wing	Done	N/A	N/A	Final GDR in preparation	Draft Volumes 1 and 2 in preparation (SJAFCA areas to be combined into one GER)
29	Walker Slough	Done	N/A	N/A	Draft GDR under review by DWR	

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Geotechnical Evaluation Report (GER)
30	Pixley Slough	Done	N/A	N/A	Draft GDR under review by DWR	
31	Mosher Diversion	Done	N/A	N/A	Draft GDR in preparation	
32	Mosher Slough	Done	N/A	N/A	Draft GDR in preparation	
33	Upper Calaveras	Done	N/A	N/A	Draft GDR in preparation	

ULE Summary

- Overall, ULE is 93 percent complete.
- Marysville, Sacramento River, and Natomas South GER Volume 1 Final hard copies and electronic deliverable completed.
- RD 784 GER Volume 2 final hard copies and electronic deliverable completed.
- Several Tasks 5, 6, and 7s completed for multiple study areas.
- DWR, Independent Consulting Board (ICB), and Stakeholders completed their reviews of GER Volume 1 Draft 2 for Woodland, Natomas East Main Drain Canal (NEMDC) West, Southwest Sacramento, Deep Water Ship Canal, and Bear Creek.
- DWR completed their review of GER Volume 1 Draft 1 for Calaveras River, Sutter Feather River, RD 17, and NEMDC East.
- DWR, ICB, and Stakeholders completed their review of GER Volume 2 Draft 1 for Marysville
- Geotechnical analyses of existing conditions are completed for each urban area.

The overall status of the NULE program intermediate and final deliverables for the 21 non-urban levee study areas is shown in the table below.

No.	Non-Urban Study Area	Geotechnical Assessment Report (GAR)	Remedial Alternatives and Cost Estimate Report (RACER)	Geotechnical Data Report (GDR)	Geotechnical Overview Report (GOR)
1	Chico/North/South	Done	Done	Done	Volume 1 Done; draft volume 2 under review by the ICB
2	Clarksburg	Done	Done	Done	Done
3	Colusa Drain	Done	Done	Done	Done

No.	Non-Urban Study Area	Geotechnical Assessment Report (GAR)	Remedial Alternatives and Cost Estimate Report (RACER)	Geotechnical Data Report (GDR)	Geotechnical Overview Report (GOR)
4	Colusa North	Done	Done	Done	Volume 1 Done; Volume 2 print check in preparation
5	Colusa South	Done	Done	Done	Volume 1 Done; draft volume 2 under review by the ICB
6	Gerber	Done	Done	Done	Done
7	Knights Landing	Done	Done	Done	Done
8	Sutter	Done	Done	Done	Done
9	Wheatland	Done	Done	Done	Done
10	Woodland South	Done	Done	Done	Done
11	Ash Slough	Done	Done	Done	Volume 1 Done
12	Berenda Slough	Done	Done	Done	Draft Volume 1 in preparation for ICB review
13	Black Rascal/ Fairfield	Done	Done	Done	Volume 1 Done
14	Diverting Canal/ Mormon	Done	Done	Done	Volume 1 Done
15	ESB/ Chowchilla	Done	Done	Done	Draft Volume 1 in preparation
16	Fresno River	Done	Done	Done	Volume 1 print check under review by DWR
17	Gravelly Ford	Done	Done	Done	Volume 1 Done
18	RD 2064	Done	Done	Done	Draft Volume 1 in preparation
19	RD 2075	Done	Done	Done	Draft Volume 1 in preparation
20	RD 2095	Done	Done	Done	Draft Volume 1 under review by DWR
21	SJRRP/CCID	Done	Done	Done	Draft Volume 1

No.	Non-Urban Study Area	Geotechnical Assessment Report (GAR)	Remedial Alternatives and Cost Estimate Report (RACER)	Geotechnical Data Report (GDR)	Geotechnical Overview Report (GOR)
					print check in preparation
22	SJAFCA upland levees	Final GAR in progress	NA	NA	NA

NULE Summary

- Overall, Non-Urban Levee Evaluations are 94 percent complete.
- GOR Volume 2 was finalized for Clarksburg; Colusa Drain; Gerber; Knights Landing; Sutter; and Wheatland were finalized.
- Diverting Canal/Mormon GOR Volume 1 was finalized.

SAN JOAQUIN RIVER RESTORATION PROJECT (SJRRP)

Division of Flood Management has created the SJRRP Project to assist the Bureau of Reclamation (Reclamation) in assessing flood risks associated with the San Joaquin River Restoration Program. The San Joaquin River Restoration Program is a comprehensive long-term effort to restore flows to the upper San Joaquin River and restore a self-sustaining Chinook salmon fishery while avoiding adverse water supply impacts. Reclamation, lead agency for the SJRRP, has initiated Interim releases from Friant Dam and is evaluating alternatives for releases and routing of restoration flows up to 4,500 cubic feet per second to support reintroduction of fish into the San Joaquin River as required by the Stipulation of Settlement (Settlement). DWR has offered technical and funding assistance to the program in recognition of the Department’s role in habitat restoration and flood management.

The purpose of the SJRRP is to assist the San Joaquin River Restoration Program in assessing the flood risk impacts of Restoration flows under this program due to seepage and stability and identifying potential remedies to address increased flood risks under Restoration flows in coordination with the Central Valley Flood Protection Plan.

- Phase 2 field exploration was completed.
- Geotechnical analysis of the Eastside Bypass is underway.

LEVEE REPAIRS

No new information this month.

FLOOD SYSTEM OPERATIONS AND MAINTENANCE (FSO&M)

FSO&M focuses on maintaining individual elements such as levees, hydraulic control structures, pumping plants, bridges, and channels to continue to achieve risk reduction benefits the system was designed to provide communities and the state. Local agencies and the state share responsibility for this work. LMAs operate and maintain a majority of the system through management of their individual levee systems, while the state is required to operate and maintain those portions of the SPFC identified in the California Water Code (CWC). Local agencies and the state work closely with the Board, USACE, and environmental resource agencies to ensure that operation and maintenance activities meet statutory requirements that promote public safety, environmental stewardship, and economic stability.

CHANNEL EVALUATION AND REHABILITATION

As part of the FSO&M mega program, the Channel Evaluation and Rehabilitation Program is responsible for operating, maintaining, and repairing SPFC channels identified in assurances to the federal government and defined in CWC Section 8361. DWR operates and maintains approximately 1,200 miles of SPFC channels of the Sacramento River Flood Control Project to ensure proper flood protection function and conveyance capacity.

Proposition 1E funding is being used for extraordinary operation and maintenance activities, including SPFC channel evaluations, mercury characterization and control implementation, and channel conveyance capacity deficiency correction. Routine operations and maintenance requirements will be separately funded by General Fund augmentation.

Specific Channel Evaluation and Rehabilitation Program activities include channel inspections and evaluations, as well as developing and utilizing hydraulic models to identify critical areas within channels requiring the removal of vegetation or sediment to maintain channel capacity and flood protection function.

Channel responsibilities also include those under the Central Valley Regional Water Quality Control Board's adopted Total Maximum Daily Loads (TMDLs) and Basin Plan Amendment, wherein the DWR is assigned responsibility for monitoring, evaluating and reducing total methyl mercury loads passing through the Flood Control System and into the Yolo Bypass and the Delta. DWR is mandated to conduct characterization and control studies for activities including flood control improvements, modifications, and wetland mitigation work with the potential to impact methyl mercury concentrations in the Yolo Bypass and Delta.

Bear River Hydraulic Model

Staff completed processing LiDAR data and finished extracting cross sections from Yolo County LiDAR survey data. Staff updated levee (top of bank) profile comparison plots above Interstate 5. HEC-RAS model development is on-going.

Chico Area Streams Hydraulic Model

No new information this month.

East Side Canal (aka Coon Creek Interceptor, Sacramento County)

No new information this month.

Llano Seco Riparian Sanctuary Unit Restoration and Pumping Plant/Fish Screen Facility Protection Project

No new information this month.

Middle Creek Hydraulic Model (Lake County)

Northern Regional Office has reviewed a CVFED model and developed a Scope of Work to complete the model. The Partnering agreement between Northern Regional Office and Flood Maintenance Office is finalized. Northern Regional Office will begin a bathymetric survey in mid-October to support model development and updating.

Natomas East Main Drainage Canal

No new information this month.

Putah Creek Hydraulic Model

No new information this month.

Sutter Pumping Plants Fish Screen Investigation

Flood Maintenance Office provided final comments to Northern Regional Office on a draft report. Northern Regional Office will finalize the report and present findings to Butte Creek stakeholders.

Additional activities during the month of September included:

- Mowing is 100% complete at Cache Creek Settling Basin (120 acres), Knights Landing Ridge Cut (80 acres), Schrieners' Property (65 acres), Sycamore Creek (10 acres), and Cherokee Canal (130 acres).
- Mowing is ongoing at Freemont Weir, Butte Creek, Sutter Bypass, and O'Connor Lake.
- Tree removal is ongoing in the Sacramento and Yolo Bypasses.
- Mulching is ongoing in the Sutter Bypass.
- Discing and vegetation removal is ongoing in the Butte Slough Wildlife area.

FLOOD CONTROL FACILITIES EVALUATION AND REHABILITATION (FCFER)

The FCFER program includes evaluating, operating, maintaining, and repairing SPFC facilities defined in CWC Section 8361 and state assurance to the federal government. DWR is responsible for operating and maintaining Sacramento River Flood Control Project SPFC facilities including 11 weirs, 5 gate structures, 4 pumping plants, and specific bridges associated with the east levee of the Sutter Bypass, ensuring proper flood protection function and facility condition. Rehabilitation and improvement work includes proactive repair of known and documented problems with prioritization based on flood risks and safety.

Butte Slough Outfall Gates (BSOG)

Staff is completing access and right of entry agreements and continuing to work on requisite permit applications and associated environmental documents for the proposed work.

LEEVE OPERATIONS AND MAINTENANCE COMPONENTS

The Levee Operation and Maintenance Program include the following components:

- *Inspection and Evaluation*
- *Routine Operations and Maintenance*
- *Non-Routine Projects*

The Levee Maintenance Program, like the Channel Maintenance Program, is generally organized around the continual and ongoing maintenance of specific levee structures in the Sacramento River Flood Control Project. Both the Sacramento and Sutter Yards have assigned responsibilities for specific levee reaches to provide performance-based levee maintenance to help ensure the levee will perform satisfactorily during any high water flood event.

When a levee evaluation and inspection report indicates that a significant repair or rehabilitation is required, the design and construction will be turned over to the levee repair program and constructed as a capital outlay project under the flood risk reduction mega-program. Otherwise the three component activities are considered as “operations and maintenance”.

Activities during the month of September included:

- Cache Creek vegetation spraying is 100% complete (120 Acres).
- East levee Yolo Bypass vegetation spraying is 100% complete (50 acres).
- Putah Creek vegetation spraying is ongoing.
- Slope dragging is 100% complete at Maintenance Area 12 (11.31 miles) and Tisdale Bypass (4 miles).
- Slope dragging is ongoing at Cache Creek.
- Levee burning is ongoing at Cache Creek and Sacramento Bypass.
- Crown road grading is ongoing at Willow Slough Bypass.
- Tree trimming is ongoing at Cache Creek and Maintenance Area 9.
- Levee mowing is 100% complete at Cache Creek and is ongoing at Maintenance Area 7.
- Levee repairs are 100% complete at the Cache Creek Levee (training) and ongoing at the south levee of the Sacramento Bypass.

FLOOD SYSTEM EVALUATION AND REHABILITATION (FSER)

The FSER program includes evaluating, operating, maintaining, and repairing SPFC facilities pursuant to state assurances to the federal government. This FSER program supports implementation of the SSIA laid out in the CVFPP. The program improves DWR's integrated flood protection mission. Specific FSER activities include: program management; policy development; support for Board permitting and encroachment enforcement; corridor management strategy development; Title 23 regulation updates; easement identification and reconciliation; management of state-owned properties and easements; and integrated water management activities.

Lower Feather River Corridor Management Plan

No new information this month.

LEVEE REPAIRS

On September 26, 2014, an informational briefing was presented to the Board on the status and direction of the Flood System Repair Project (FSRP). To date, FSRP has committed approximately \$13.7 million of Proposition 1E funds for critical levee erosion repairs, all-weather access road repair, and electrical control structure repair projects in six rural LMAs along the Sacramento and San Joaquin River systems.

The Chief Engineer of the Board approved a request by USACE to degrade the existing levee for completion of the setback levee at River Mile 57.2R. This approval, required by the contract specifications, allows for the removal of the existing levee, now protected with a new setback levee, and the finalization of the project. Construction of this setback levee at SAC 57.2R is part of USACE's Sacramento River Bank Protection Project in which the Board is the non-federal sponsor.