

**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. Staff presented a demo of the FERIX web-portal to the Interagency Flood Management Collaborative Group.

### **Inspections**

Staff are completing fall levee inspections and preparing the annual report. An effort to conduct inspections of Designated Floodways is ongoing. Staff continues to work with Central Valley Flood Protection Board (Board) inspecting and coordinating encroachment permits. The Encroachment Permit database continues to be updated. Updated levee alignments and a new levee mile calculator are expected to be completed shortly. 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 Department of Water Resources (DWR), US Army Corps of Engineers (USACE), the Board, and Local Maintaining Agencies (LMA) in a number of venues including flood preparedness efforts.

### **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 October 31, statewide hydrologic conditions were as follows: precipitation, 75 percent of average to date; runoff, 65 percent of average to date; and reservoir storage, 55 percent of

average for the date. Sacramento River Region unimpaired runoff, for Water Year 2015, observed through October 31, 2014 was about 0.3 million acre-feet (MAF), which is about 68 percent of average. In comparison to Water Year 2014, the observed Sacramento River Region unimpaired runoff through October 31, 2013 was about 0.3 MAF, or about 68 percent of average.

On October 31, the Northern Sierra 8-Station Precipitation Index Water Year total was 2.7 inches, which is about 90 percent of the seasonal average to date and 5 percent of an average water year (50.0 inches). During October, the total precipitation for the 8-Stations was 2.7 inches, or about 90 percent of average for the month. Last year on October 31, the Water Year 2013 seasonal total for the 8-Stations was 0.7 inches, or about 23 percent of average.

On October 31, the San Joaquin 5-Station Precipitation Index Water Year total was 0.1 inches, which is about 5 percent of the seasonal average to date and 0.2 percent of an average water year (40.8 inches). During October, the total precipitation for the 5-Stations was 0.1 inches, or about 5 percent of average for the month. Last year on October 31, the Water Year 2013 seasonal total for the 5-Stations was 0.9 inches, or about 43 percent of average.

Selected Cities Precipitation Accumulation as of 10/31/2014 (National Weather Service)					
City	July 1 to Date 2014 – 2014 (in inches)	% Average	July 1 to Date 2013 – 2013 (in inches)	% Average	% Avg. "Water Year" July 1 to June 30 2014 - 2015
Eureka	7.87	237	3.27	98	20
Redding	5.59	186	1.40	47	16
Sacramento	0.89	69	0.59	46	5
San Francisco	1.10	79	0.43	31	5
Fresno	0.19	23	0.04	5	2
Bakersfield	0.01	2	0.03	7	0
Los Angeles	0.19	22	0.05	6	1
San Diego	0.08	10	0.30	39	1

Key Reservoir Storage (1,000) AF) as of 10/31/2014								
Reservoir	River	Storage	Avg. Storage	% Avg.	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	562	1,591	35	2,448	23	---	1,886
Shasta Lake	Sacramento	1,109	2,674	41	4,552	24	-2,783	3,443
Lake Oroville	Feather	954	2,127	45	3,538	27	-2,209	2,584
New Bullards Bar	Yuba	390	541	72	970	40	-406	576
Folsom Lake	American	305	498	61	977	31	-419	672
New Melones Res	Stanislaus	513	1,340	38	2,400	21	-1,457	1,907
Don Pedro Res	Tuolumne	756	1,309	58	2,030	37	-934	1,274
Lake McClure	Merced	90	449	20	1,032	9	-584	935
Millerton Lake	San Joaquin	175	195	90	520	34	-260	345

Key Reservoir Storage (1,000) AF) as of 10/31/2014								
Reservoir	River	Storage	Avg. Storage	% Avg.	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Pine Flat Res	Kings	113	345	33	1,000	11	-646	887
Isabella	Kern	45	164	28	568	8	-125	523
San Luis Res	(Offstream)	394	1,080	36	2,041	19	---	1,645

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for November 2014, issued October 31, 2014, suggests no tendency for above or below average rainfall for all of California.

**RESERVOIR OPERATIONS & RIVER FORECASTING**

No new information this month.

**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.*

**2014 DWR Preseason Flood Coordination Meetings**

Staff conducted Preseason Flood Coordination meetings with emergency responders in Stanislaus, Sutter, Santa Cruz, and Sacramento Counties. In addition, staff participated in Preseason meetings sponsored by others including Cal OES Mutual Aid Response Advisory Committee (MARAC) and Santa Clara Valley Water District.

Turnout Statistics as of 11-10-14

Date	Location/Host County	Turnout (not incl. DFM staff)	County Representative Present
9/16	Ventura	30	Ventura, Santa Barbara, San Luis Obispo, Los Angeles
9/17	Riverside	19	Riverside, San Bernardino
9/22	San Joaquin	54	San Joaquin, Alameda
9/25	Fresno	27	Fresno, Merced, Madera, Kern, Mariposa
9/30	Napa	38	Napa, Solano, Contra Costa, Sonoma, Marin, Lake, Mendocino
10/2	Stanislaus	48	<i>Stanislaus County only - Cities:</i> Modesto, Ceres, Turlock, Patterson, Waterford, Riverbank, E & J Gallo
10/7	Sutter	38	Sutter, Yuba, Butte, Sierra, Colusa

<b>Date</b>	<b>Location/Host County</b>	<b>Turnout (not incl. DFM staff)</b>	<b>County Representative Present</b>
10/9	Santa Cruz	12	Santa Cruz, Monterey, San Benito
10/14	Sacramento	64	Sacramento, Yolo, El Dorado
11/6	Humboldt	30	Humboldt, Hoopa Tribe, Yurok Tribe

2014 County Organized Preseason Meetings

<b>Date</b>	<b>Location/Host County</b>	<b>Turnout</b>
9/29	Orange	Approximately 25
10/30	Santa Clara Water District	25
12/5	San Diego	TBD

**FLOOD EMERGENCY RESPONSE GRANTS**

*Flood ER Grants are intended to improve local flood emergency response and increase public safety. They consist of three subprograms: 1) Statewide ER Grant, which excludes the Delta; 2) Delta ER Grant for Delta only; and 3) the Delta Emergency Communications Grant, a one-time grant to local Delta agencies only. Public agencies with primary responsibility for flood emergency response and coordination are eligible to apply for either Statewide or Delta competitive grants. A key priority of these grants is the development and coordination of flood emergency plans between local flood agencies and county emergency response operational areas.*

**Statewide Emergency Response Grants**

Staff continued to manage the 14 executed grant contracts with local agencies to improve their flood emergency response. Staff submitted a Proposal Solicitation Package to DWR Executive for approval to make up to an additional \$5 million in Proposition 84 funds available.

**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)**

No new information this month.



## **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**

An internal DWR Draft Conservation Strategy is under DWR review prior to release to the CVFPB and public in December. An amended Appendix H (Central Valley Chinook Salmon Rearing Habitat Needed to Satisfy the Anadromous Fish Restoration Program (AFRP) Doubling Goal) and new Appendix L (Measurable Objectives Development: Summary of Conservation Needs and Scale of Restoration Opportunities ) were posted for Interagency Advisory Committee (IAC) review and responses are pending.

### Interagency Advisory Committee

DWR met with the Interagency Advisory Committee on November 13 to review changes to the Draft Conservation Strategy including the addition of conservation needs, scale of restoration opportunities, and ecological objective targets. The January IAC meeting is cancelled in anticipation of a CVFPB hosted Conservation Strategy Workshop on Friday, January 9.

### Measurable Objectives Technical Memorandum

Staff is preparing the Measurable Objectives Technical Memorandum based on the work of DWR, resource agencies and NGO partners during four Measurable Objectives Workgroup meetings in October. The Technical Memorandum will be made available to the CVFPB Measurable Objectives Subcommittee and IAC members in December.

## **STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING (SIFMP)**

No new information this month.

## **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**

*Floodplain Management Assistance provides statewide technical support to federal, state and local agencies as well as the public for flood hazard maps, levee data, and the National Flood Insurance Program (NFIP) activities including the Community Rating System (CRS). As part of the NFIP Community Assistance Program (CAP) grant-partnership with the Federal Emergency Management Agency (FEMA), DWR conducts audits of communities participating in the NFIP, provides technical assistance to the public, and trains community officials.*

- Staff conducted a Community Assistance Visit in Crescent City. The meeting was held at City Hall.
- Staff participated in the 5-year CRS audit of the City of Woodland. Staff made a presentation on Uniform Minimum Credits (UMC) to City staff.
- Previously offered only in Maryland, staff has organized with the Association of State Floodplain Managers to teach *Managing Floodplain Development through the National Flood Insurance Program*. The four day training will be held in Southern California.

### **Flood Risk Notification (FRN)**

No new information this month.

### **Coastal Floodplain Evaluation and Planning**

No new information this month.

### **CENTRAL VALLEY FLOODPLAIN EVALUATION AND DELINEATION (CVFED)**

No new information this month.

### **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. On behalf of the Board, staff 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 Subventions Program reimbursed over \$8.4 million to Local Levee Maintaining Agencies for maintenance and rehabilitation activities performed in the Sacramento-San Joaquin Delta for FY2012-13.

#### 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.
- Staff received 61 final claims by the November 1, 2013 deadline totaling approximately \$11 million in work performed.
- Staff conducted 14 joint levee inspections with the California Department of Fish and Wildlife and the local levee maintaining agencies.
- Claims are being reviewed for eligibility and completeness. The eligible amounts will be reimbursed to the local agencies after final review.

#### Work Agreements for FY 2014-2015

- Staff received applications from 69 local agencies to participate in the FY 2014-2015 Subventions Program.
- On October 24, 2014, the Board approved the FY 2014-15 funding plan for \$12 million.

## **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. The DSC has been collecting information and developing the framework for its investment strategy tool. The DSC held two meetings for agency representatives and technical advisors to showcase the tool. There will be two meeting for the public on the same topic. The first will be held in Clarksburg on December 8<sup>th</sup> at the Clarksburg Middle Scholl Auditorium from 6:30-8:30. 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. The 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 November and will continue to meet monthly to confer and coordinate on relevant issues. More information on the Delta levees investment strategy is available on the DSC website.

#### **Delta Protection Commission (DPC) Interagency Agreement (IA)**

The DPC IA funds the study to investigate the feasibility of a statewide benefit assessment district for the Delta. The DPC released their Request for Proposal (RFP) in September; however, they didn't receive any bids on their proposal. The Commission revised the RFP and released it for bid. Proposals are due December 5<sup>th</sup>. The Commission hopes to award the contract at its January 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, L5A, and Jacob Lane (Reach C) sites are complete.
- Construction of Site R7, L7, R3A, L10, and Mayhew Extension are ongoing.
- The NEMDC Extension site construction start is scheduled for summer 2015.

**American River Watershed – Natomas Basin Project**

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

- In October 2014, DWR reviewed the geotechnical exploration plan for geotechnical design of flood control improvements for Reach H, approximately 4.3 miles of the west levee, Natomas East Main Drainage Canal (NEMDC).
- USACE and DWR staff continue discussing credit for non-federal work performed for the Natomas Levee Improvement Program; a draft Credit report submittal for this work to USACE is planned by the end of 2014.

**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 November 1, 2014, is as follows:

<b>Phases</b>	<b>Planning &amp; Design</b>	<b>Construction</b>
Preconstruction Engineering and Design	100%	N/A
Phase III – Control Structure	100%	88%
Phase IV – Approach Channel, Chute, and Stilling Basin	100%	34%
Phase V – Site Restoration	47.3%	5.5%
Project Overall	93.9%	57%

**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**

No new information this month.

## **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 State Plan of Flood Control (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)**

*The GRR will provide a plan to achieve 200-year level of flood protection for the Lower American River, downstream of the Folsom Dam, the Sacramento River (downstream of the Natomas Cross Canal), and the Natomas Cross Canal.*

On November 10, 2014, Sacramento Area Flood Control Agency (SAFCA) discussed Alternative 2, which includes Sacramento Bypass expansion, with the U.S. Army Corps of Engineers Headquarters (USACE-HQ) and the Assistant Secretary of Army's (ASA) offices advocating selection of the Alternative 2 as the Tentatively Selected Plan (TSP). Both offices continue to show support for Alternative 2. USACE will continue to explore additional benefits for Alternative 2, to justify selection as TSP.

### **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**

No new information this month.

### **Sutter Basin Feasibility Study**

No new information this month.

### **West Sacramento Project GRR**

No new information this month.

### **Woodland/Lower Cache Creek Feasibility Study**

No new information this month.

**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 Central Valley Flood Protection Plan (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.

**Reclamation District 17 (RD-17) – 100-Year Seepage Area Project**

This project is closed out.

**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 (SJAFCA) – Smith Canal Closure Structure**

The Smith Canal Closure Project will construct a miter gate at the mouth of the Smith Canal on the San Joaquin River/Stockton Deep Water Ship Channel to provide a 100-year level of flood protection to a portion of the City of Stockton. The state share of this project's design cost is \$2,412,500.

SJAFCA plans to present the final preferred alternative to their Board in December 2014. California Environmental Quality Act (CEQA) work continues.

### **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.

SBFCA has completed 17 miles of cutoff wall construction for this year; finish grading and utility relocations is scheduled for completion before December 23, 2014 – Construction period extension to December 23, 2014 was approved by the CVFPB.

### **SMALL COMMUNITIES FLOOD RISK REDUCTION (SCFRR) PROGRAM**

*This program provides local assistance to small communities in the Central Valley located in "high" or "moderate to high" flood risk areas. SCFRR program assists small communities by cost sharing feasibility studies, design, and construction of projects to improve flood protection to 100-year level of flood protection.*

A December 2, 2014, meeting is scheduled with Colusa County, City of Colusa, communities of Grimes and Princeton, to discuss the available state data and the locals need to identify alternatives for structural and non-structural solutions for the areas.

### **FLOOD CORRIDOR PROGRAM (FCP)**

*The FCP is the only statewide grant program in which non-structural flood risk reduction is the primary goal, with habitat and agricultural conservation incorporated as prominent program components. The goal of FCP is to reduce flood risk by enabling waterways to function more naturally, while enhancing native wildlife habitat, and preserving agricultural uses. To do this the program provides grant funding to local agencies statewide for FRRP that improve floodwater conveyance and transitory floodwater storage, using primarily non-structural methods while preserving or enhancing agricultural production and/or wildlife habitat. By incorporating non-structural solutions, the program achieves flood benefits at a fraction of the cost of traditional structural solutions.*

### **Ecosystem Restoration and Floodplain Attenuation, San Joaquin River (ERFA) Project**

River Partners presented an informational briefing at Board meeting on October 24, 2014. The purpose was to inform the Board of their role in the project, including possible easement relinquishment, CEQA coordination, and future permitting.



### **Salt River Ecosystem Restoration Project**

After the first phase of in-stream construction was completed, the coffer dam at the downstream end of the project was pulled, allowing tidal waters to enter the Salt River channel for the first time in almost 50 years.

### **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.*

### **Ventura River Levee 1 LOLE Project**

This project was completed in October 2014. DWR released payment for final invoice to the Ventura County Watershed Protection District and is closing out the project.

### **YUBA-FEATHER FLOOD PROTECTION PROGRAM**

*The Yuba-Feather Flood Protection Program provides Proposition 13 financial assistance to local entities that can demonstrate nonstructural flood management projects that show a peak flood flow reduction, flood stage, and flood risk in the Yuba and Feather River and Colusa Basin (including wildlife habitat enhancement and/or agricultural land preservation).*

### **Oroville Wildlife Area Flood Stage Reduction Project**

*This project proposes to use the Oroville Wildlife Area as a temporary detention basin to help relieve stress on the downstream system during high water events.*

A funding agreement for this project was executed on October 28, 2014.

### **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	<b>Volume 1 Done;</b> Final Volume 2 in preparation
3	RD 784	Done	Done	Done	Done	<b>Done</b>
4	Feather River West Levee	Done	Done	Done	Done	<b>Volume 1 Done;</b> Print Check Volume 2 in preparation
5	Sutter Bypass Wadsworth	Done	Done	Done	Done	<b>Volume 1 Done;</b> Print Check 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	<b>Volume 1 Done;</b> Print Check Volume 2 in preparation
8	Davis	Done	Done	Done	Done	Draft 2 Volume 1 in preparation; Draft Volume 2 in preparation
9	Woodland	Done	Done	Done	Done	Final 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)
10	NEMDC East	Done	Done	Done	Done	Draft 2 Volume 1 in preparation
11	NEMDC West	Done	Done	Done	Done	Print check Volume 1 under review by DWR; Draft Volume 2 under review by DWR
12	Natomas North	Done	Done	Done	Done	Draft Volume 1 and 2 under review by DWR
13	Natomas South	Done	Done	Done	Done	<b>Volume 1 Done;</b> Print Check Volume 2 in preparation
14	West Sacramento	Done	Done	Done	Done	<b>Done</b>
15	Deep Water Ship Channel [DWSC]	Done	N/A	N/A	Done	<b>Volume 1 Done;</b> Print Check Volume 2 in preparation
16	South Sac Streams	Done	N/A	Done	Done	Draft Volume 1 under review by DWR
17	RD 404	Done	Done	Done	Done	<b>Volume 1 Done;</b> Final Volume 2 in preparation
18	RD 17	Done	Done	Done	Done	Draft 2 Volume 1 in preparation
19	Bear Creek	Done	Done	Done	Done	<b>Volume 1 Done;</b> Draft Volume 2 under review by DWR
20	Calaveras River	Done	Done	Done	Done	Draft 2 Volume 1 under review by ICB and Stakeholders

<b>No.</b>	<b>Urban Study Area</b>	<b>Historic Data Collection (TRM)</b>	<b>Initial Field Investigations (P1GDR)</b>	<b>Preliminary Analyses</b>	<b>Supplemental Field Investigations (SGDR)</b>	<b>Final Analyses &amp; Geotechnical Evaluation Report (GER)</b>
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	Final Volume 1 in preparation; Draft 1 Volume 2 in preparation
25	Shima Tract	Done	N/A	N/A	Final GDR in preparation	Draft Volume 2 in preparation for ICB review
26	Smith Canal	Done	N/A	N/A	Final GDR in preparation	Draft Volume 1 under review by DWR; Draft Volume 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	
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	

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Geotechnical Evaluation Report (GER)
33	Upper Calaveras	Done	N/A	N/A	Draft GDR in preparation	

**ULE Summary**

- Overall, ULE is 95 percent complete.
- Tasks 5, 6, and 7 completed for multiple study areas.
- DWR completed review of Sutter County Feather River, SJAFCA Bear Creek, West Sacramento deep water ship channel and Woodland Print Check GER Volume 1.
- DWR completed review of Marysville and RD 404 Print Check GER Volume 2.
- DWR, Independent Consulting Board (ICB), and Stakeholders completed review of GER Volume 2 Draft 2 for Sutter Bypass.
- GER Volume 2 Draft 2 for Sutter Feather River under review by DWR, ICB, and Stakeholders.
- Final GER Volume 1 completed for Sutter Feather River, Sacramento Deep Water Ship Channel, and SJAFCA Bear Creek.

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	<b>Done</b>
2	Clarksburg	Done	Done	Done	<b>Done</b>
3	Colusa Drain	Done	Done	Done	<b>Done</b>
4	Colusa North	Done	Done	Done	<b>Done</b>
5	Colusa South	Done	Done	Done	<b>Volume 1 Done;</b> final Volume 2 in preparation
6	Gerber	Done	Done	Done	<b>Done</b>
7	Knights Landing	Done	Done	Done	<b>Done</b>
8	Sutter	Done	Done	Done	<b>Done</b>
9	Wheatland	Done	Done	Done	<b>Done</b>
10	Woodland South	Done	Done	Done	<b>Done</b>

No.	Non-Urban Study Area	Geotechnical Assessment Report (GAR)	Remedial Alternatives and Cost Estimate Report (RACER)	Geotechnical Data Report (GDR)	Geotechnical Overview Report (GOR)
11	Ash Slough	Done	Done	Done	<b>Volume 1 Done;</b> Draft Volume 2 under review by DWR
12	Berenda Slough	Done	Done	Done	Draft Volume 1 under review by ICB
13	Black Rascal/ Fairfield	Done	Done	Done	<b>Volume 1 Done</b>
14	Diverting Canal/ Mormon	Done	Done	Done	<b>Volume 1 Done</b>
15	ESB/ Chowchilla	Done	Done	Done	Draft Volume 1 in preparation
16	Fresno River	Done	Done	Done	<b>Volume 1 Done</b>
17	Gravelly Ford	Done	Done	Done	<b>Volume 1 Done;</b> Draft Volume 2 in preparation for ICB review
18	RD 2064	Done	Done	Done	Responses to DWR comments on Draft Volume 1 in preparation
19	RD 2075	Done	Done	Done	Draft Volume 1 in preparation
20	RD 2095	Done	Done	Done	Responses to DWR comments on Draft Volume 1 under review by DWR
21	SJRRP/CCID	Done	Done	Done	Volume 1 print check under review by DWR
22	SJAFCA upland levees	Print check of Final GAR under review by DWR	NA	NA	NA

### **NULE Summary**

- Overall, Non-Urban Levee Evaluations are 96 percent complete.
- GOR Volume 2 was finalized for Chico North and South

### **SAN JOAQUIN RIVER RESTORATION PROJECT (SJRRP)**

*Division of Flood Management has created the SJRRP Project to assist the United States 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 DWR'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 CVFPP.*

- Draft Phase 1/2 Geotechnical Data Report is under review by DWR.
- Geotechnical analysis of the Eastside Bypass continues.
- Draft GER for Eastside Bypass in preparation.
- Developed the table of contents for the SJRRP geotechnical evaluation report.
- Cross-sections for Gravelly Ford area in preparation.

### **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**

FMO staff conducted several site visits to the Bear River area including the Bear River, the Western Pacific Interceptor Canal, and Yankee Slough. A railroad bridge across Yankee Slough is being rebuilt (converted from wood structure to steel and concrete structure) and existing model will need to be updated to reflect new structure. Staff is working on model calibration.

### **Butte Creek Hydraulic Model**

FMO and Yard staff conducted hydraulic channel inspection to compare current conditions to conditions when the model was initially developed approximately two years ago. New Highway 99 North Bridge has been constructed since initial model developed. The model is being updated to reflect new conditions.

### **Cherokee Canal Hydraulic Model**

Staff is finalizing the hydraulic model report.

### **Chico Area Streams Hydraulic Model**

Staff is finalizing a draft channel management plan with proposed actions to restore channel capacity.



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

No new information this month.

**Knights Landing Ridge Cut/Colusa Drain Hydraulic Model**

Staff combined CVFED models into one model for Knights Landing Ridge Cut/Colusa Drain. Staff conducted an initial field visit and are working on refining channel roughness assumptions in the model.

**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 Region Office completed their channel survey. During the survey, several rock weirs were noted that were recent additions to the channel. Staff contacted the LMA for additional information on these weirs and will be working to incorporate these into the model as well as other model refinements.

**Natomas East Main Drainage Canal (NEMDC)**

Sacramento Maintenance Yard began vegetation management in NEMDC between the D-15 pumping plant and Arcade Creek. Work is expected to continue into December dependent on weather conditions.

**Putah Creek Hydraulic Model**

No new information this month.

**Sutter Bypass Hydraulic Model**

FMO and Yard staff conducted hydraulic channel inspection to compare current conditions to assumed conditions when the 2-D model was developed by CH2MHill for the CVFPB and DWR approximately two years ago. Only routine maintenance work has been done in the Bypass since then and no major changes were noted.

**Sutter Pumping Plants Fish Screen Investigation**

No new information this month.

**Tisdale Bypass Hydraulic Model**

FMO and Yard staff conducted hydraulic channel inspection to compare current conditions to conditions when the model was initially developed approximately a year ago. Only routine maintenance work has been done in the Bypass since then and no major changes were noted.

### **Wadsworth Canal Hydraulic Model**

FMO and Yard staff conducted hydraulic channel inspection to compare current conditions to conditions when the model was initially developed approximately two years ago and inspected last year. Only routine maintenance work has been done since then and no major changes were noted.

#### **Additional activities during the month of November include:**

- Mowing is 100% complete in Lake of the Woods (140 acres), 100% complete in Sutter Bypass (100 acres), 100% complete in O'Conner Lakes (20 acres), ongoing in Bear River (5 acres), and ongoing in Little Chico Diversion (5 acres).
- Mulching is 100% complete in the Sutter Bypass (15 acres).
- Vegetation Control is 100% complete in the Sutter Bypass (15 acres) and 100% complete in Elder Creek (1 acre).
- Tree removal is 100% complete in the Sacramento Bypass (5 acres).
- Spraying is ongoing in Elder Creek (10 acres).
- Debris removal is ongoing in Sutter Bypass seepage ditches, Little Chico Creek, Little Chico Diversion, and at Sutter Bypass low water bridges.
- Beaver dam removal is ongoing in the Cherokee Canal.

### **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)**

Environmental staff submitted requisite environmental permit applications and associated environmental documents for the proposed rehabilitation work. Real Estate is working on access and right of entry agreements.

#### **Additional activities during the month of November include:**

- Debris removal at pumping plants is ongoing.
- Replacement of needles and hinges at Sacramento Weir is 100% complete.

### **LEVEE OPERATIONS AND MAINTENANCE COMPONENTS**

*The Levee Operation and Maintenance Program includes 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 November include:**

- Vegetation spot spraying at Putah Creek is 100% complete (5 acres) and 55% complete at Cache Creek (5 acres).
- Mowing is 100% complete at MA 7 (4 miles), 100% complete at MA 17 (4 miles), and 20% complete at Prospect Island (5 acres).
- Toe road spraying is 100% complete at Sutter Bypass (15 miles) and 90% complete at Cache Creek (15 acres).
- Pre-emergent spraying is 100% complete on MA 4 slopes (25 acres), 100% complete on MA 13 crown roads (38 miles), 20% complete at Cache Creek crown roads (15 miles), 5% complete at Cache Creek slopes (20 acres), 50% complete at MA 9 slopes (80 acres), 15% complete at Sacramento Bypass slopes (5 acres), and is ongoing on all Sutter levee slopes.
- Levee burning is 75% complete at the north levee of Cache Creek (80 acres), 95% complete at the south levee of Cache Creek (95 acres), 80% complete at the Sacramento Bypass (30 acres), and 20% complete at Putah Creek (6 acres).
- Crown road grading is 100% complete at Willow Slough Bypass (15 acres), 100% complete at Yolo Bypass Unit 4 (5 acres), 100% complete at the East Levee of the Sutter Bypass (13 miles), 100% complete at MA 12 (11 miles), 100% complete at the East Levee of the Sacramento River (15 miles), 50% complete at Putah Creek (30 acres), and ongoing at the Tisdale Bypass.
- Tree trimming is 99% complete at Cache Creek (5 acres) and 99% complete at MA 9 (5 acres).
- Rodent hole grouting is 40% complete at MA 9.
- Mile markers have been repaired or replaced at Cache Creek (30 miles).

### **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**

The Levee Repairs program in DFM/FMO makes repairs to the State Plan of Flood Control facilities (primarily levees) through several projects. Among these are the Flood System Repair Project (FSRP), the Sacramento River Bank Protection Project (SRBPP), and the Federal Public Law 84-99 Emergency Repair Project (PL 84-99). FSRP is a bond funded program that repairs rural SPFC facilities under a state-local cost share. SRBPP is a USACE-led program that repairs urban SPFC critical erosion sites along the Sacramento River and tributaries. PL 84-99 repairs minor damages incurred from a significant flood event. DWR is cost-sharing partners and manages the state's responsibilities for the SRBPP and PL 84-99 projects.

#### **Flood System Repair Project (FSRP)**

No new information this month.

#### **Sacramento River Bank Protection Project (SRBPP)**

No new information this month.