

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

By

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FLOOD EMERGENCY RESPONSE (FER)

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 working on the Real-Time Inundation Modeling project. The project includes the development of hydraulic models and interface tools to predict flood inundation timing and extents in near real-time.

The Inspection Section has completed the field work for the fall inspection and is actively working on the Annual Inspection Report.

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, 305 percent of average to date; runoff, 255 percent of average to date; and reservoir storage, 85 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2017 observed through October 31, 2016, was about 0.9 million acre-feet (MAF), which is about 188 percent of average. In comparison to Water Year 2016, the observed Sacramento River Region unimpaired runoff through October 31, 2015, was about 0.3 MAF, or about 63 percent of average. San Joaquin River Region unimpaired runoff, for Water Year 2017, observed through October 31, 2016, was about 0.3 million acre-feet (MAF), which is about 436 percent of average. In comparison to Water Year 2016, the observed San Joaquin River Region unimpaired runoff through October 31, 2015 was about 0.03 MAF, or about 41 percent of average. Tulare

Lake Region unimpaired runoff, for Water Year 2017, observed through October 31, 2016 was about 0.04 million acre-feet (MAF), which is about 71 percent of average. In comparison to Water Year 2016, the observed Tulare Lake Region unimpaired runoff through October 31, 2015 was about 0.02 MAF, or about 41 percent of average.

On October 31, the Northern Sierra 8-Station Precipitation Index Water Year total was 12.6 inches, which is about 420 percent of the seasonal average to date and 25 percent of an average water year (50.0 inches). During October, the total precipitation for the 8-Stations was also 12.6 inches, or about 420 percent of average for the month. Last year on October 31, the Water Year 2016 seasonal total for the 8-Stations was 1.2 inches, or about 40 percent of average.

On October 31, the San Joaquin 5-Station Precipitation Index Water Year total was 6.4 inches, which is about 305 percent of the seasonal average to date and 16 percent of an average water year (40.8 inches). During October, the total precipitation for the 5-Stations was also 6.4 inches, or about 305 percent of average for the month. Last year on October 31, the Water Year 2016 seasonal total for the 5-Stations was 1.9 inches, or about 90 percent of average.

On October 31, the Tulare Basin 6-Station Precipitation Index Water Year total was 1.6 inches, which is about 133 percent of the seasonal average to date and 5 percent of an average water year (29.3 inches). During October, the total precipitation for the 6-Stations was also 1.6 inches, or about 133 percent of average for the month. Last year on October 31, the Water Year 2016 seasonal total for the 6-Stations was 1.5 inches, or about 125 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 10/31/2016					
Station	October 1 to Date 2016-2017	% Average	Season to Date 2015-2016	% Average	% Average Oct 1 – Sep 30
Mount Shasta	11.84	517	0.52	23	27
Eureka	9.56	427	1.20	54	24
Redding	6.22	296	0.27	13	18
South Lake Tahoe	7.30	406	1.27	71	36
Sacramento Executive Airport	4.64	488	0.12	13	25
Santa Rosa (Sonoma Co AP)	5.16	254	0.07	3	14
San Francisco	2.35	210	0.00	0	10
Stockton	2.32	283	0.21	26	17
Yosemite	6.58	327	3.21	160	17
Monterey	2.82	303	0.14	15	17
Paso Robles	1.34	216	0.06	10	10
Fresno	0.67	106	0.49	78	6
Bakersfield	0.24	80	0.14	47	4
Death Valley	0.03	43	1.08	1,543	1
Los Angeles	0.51	77	0.45	68	3
Riverside	0.86	307	0.16	57	7

Palm Springs	0.07	16	0.13	30	1
San Diego	0.03	5	0.43	75	0

Key Reservoir Storage (1,000 AF) as of 10/31/2016								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,038	1,591	65	2,448	42	---	1,410
Shasta Lake	Sacramento	2,784	2,675	104	4,552	61	-1,086	1,768
Lake Oroville	Feather	1,563	2,128	73	3,538	44	-1,437	1,975
New Bullards Bar Res	Yuba	651	541	121	966	67	-145	315
Folsom Lake	American	361	497	73	977	37	-354	616
New Melones Res	Stanislaus	509	1,340	38	2,400	21	-1,461	1,911
Don Pedro Res	Tuolumne	1,328	1,309	101	2,030	65	-362	702
Lake McClure	Merced	381	449	85	1,025	37	-294	644
Millerton Lake	San Joaquin	210	196	107	520	40	-184	310
Pine Flat Res	Kings	188	346	54	1,000	19	-666	812
Isabella	Kern	90	164	55	568	16	-80	478
San Luis Res	(Offstream)	599	1,085	55	2,041	29	---	1,440

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for December 2016, issued November 17, 2016, suggests average precipitation for all of California.

RESERVOIR OPERATIONS & RIVER FORECASTING

This element supports Flood Emergency Response 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 Emergency Response 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.

- No new information this month.

FLOOD EMERGENCY PREPAREDNESS & OPERATIONS

This element includes preparing the 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.

Staff continued improving the Delta Emergency Response Tool. The tool estimates the impacts following Delta levee failures, including the cost and time to make levee repairs and export disruptions for the State Water Project and Central Valley Project. Staff are completing the validation of the tool's results and testing of the interface improvements. Next, staff will run various simulations and describe the results in the Delta Flood Emergency Management Plan. The results will include the expected water export disruption durations for various scenarios.

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).

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING

*Statewide Integrated Flood Management Planning (SIFMP) has identified flood risks facing Californians and proposed mitigation measures to manage the risks. 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. It was produced working jointly with USACE and more than 140 public agencies and presented 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. Information developed for "California's Flood Future" was used to create flood management content and recommended flood related risk reduction management actions presented in the "California Water Plan Update", published in October 2013.*

- No new information this month.

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 2012 CVFPP, this program is currently implementing major planning efforts: locally led Regional Flood Management Planning 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).

2017 Update to 2012 Central Valley Flood Protection Plan

- DWR's Flood Planning Office plans to release the formal public draft 2017 CVFPP Update on December 23, 2016. If this release date is maintained, the public comment period will close on March 30, 2017.

- Stakeholder comments received on the Working Draft 2017 CVFPP Update (with comment period closed on November 28, 2016) are being considered as DWR continues to refine the Draft 2017 CVFPP Update prior to the formal public release of the document. The formal public review and comment process for the Draft 2017 CVFPP Update will begin with the release of the Draft Supplemental Program Environmental Impact Report (Draft Supplemental PEIR) pursuant to the California Environmental Quality Act (CEQA), anticipated in December. The formal public draft of the 2017 CVFPP Update will be released for public comment at the same time as the Draft Supplemental PEIR.

Supplemental Program EIR for 2017 Update to 2012 Central Valley Flood Protection Plan

- The Supplemental PEIR is in final stages of production and will be made available for review concurrent with the formal public draft 2017 CVFPP Update.

2016 State Plan of Flood Control Descriptive Document Update

- The Administrative Draft is in final stages of production and will be made available for review concurrent with the formal public draft 2017 CVFPP Update.

2017 Flood System Status Report Update

- The Administrative Draft is in final stages of production and will be made available for review concurrent with the formal public draft 2017 CVFPP Update.

Basin-wide Feasibility Studies

- DWR released a revised draft of the Sacramento River BWFS November 14, 2016. The comment period closed November 23, 2016. A revised draft is expected later in 2017. The stakeholder review draft of the San Joaquin River BWFS was available for public review and the review period closed November 23, 2016. DWR received a number of comments and is working to address those comments. A revised draft is expected in 2017. Relevant information and data from the basin-wide feasibility studies is being incorporated into the 2017 CVFPP update.

Basin-wide Feasibility Study Atlases

- No new information this month.

Regional Flood Management Planning (RFMP) Phase 2

- Both the Working Draft 2017 CVFPP Update and the Sacramento River BWFS have been open for review by the six flood management regional partners in November. DWR received review comments from several of the flood management regional partners.

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 Conservation Strategy 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

- The California Department of Water Resources has released the 2016 draft *Central Valley Flood Protection Plan Conservation Strategy* (Conservation Strategy). The Conservation Strategy is a primary component of the 2017 Update to the *Central Valley Flood Protection Plan*. It outlines a comprehensive, long-term approach to improve riverine and floodplain ecosystems, and provides guidance on how multi-benefit projects can provide ecological benefits while protecting public safety.
- The 2016 draft Conservation Strategy and appendices are now available on DWR's website at: www.water.ca.gov/conservationstrategy/cs_new.cfm.
- A document describing the process for developing the Conservation Strategy is also available on the website.

Public Engagement

CVFPO staff makes monthly presentations on the progress of development of the 2017 CVFPP at each monthly CVFPB meeting. The presentation can be viewed via archived video available at the CVFPB website CVFPB.ca.gov. Past presentations can be found on the CVFMP website at www.water.ca.gov/cvfmp/.

- The 2017 CVFPP Update engagement meeting with the Yocha Dehe Tribe occurred on December 1. The CVFPP engagement meeting with the Lone Tribe occurred on December 2. Staff discussed an overview of the 2012 CVFPP followed by a presentation on the 2017 CVFPP Update.

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 the 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.

- December 2, 2016 – DWR staff plan to participate in a workgroup meeting of the Agricultural Floodplain Ordinance Task Force. Consistent with the State’s desire to see agriculture as a best-use for floodplains, final edits will be discussed on a proposed technical memorandum that is planned to be submitted to FEMA regarding updating NFIP requirements for ag-related structures.
- December 2, 2016 - Staff will be proctoring a Certified Floodplain Manager Examination in Napa, California.

FLOOD RISK REDUCTION PROJECTS

FRFP 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 collaborate and work closely with U.S. Army Corps of Engineers (USACE).

- No new information this month.

DELTA LEVEE SYSTEM INTEGRITY (DLSI)

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

- No new information this month.

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:

- Subventions Program FY 2014-15 – Fifty-six final claims for \$6.0 million have been processed for reimbursement. Six unresolved claims require CDFW approval before payment can be made.
- Subventions Program FY 2015-16 – Sixty-five final claims were received by the due date of November 1, 2016. Staff has completed 17 joint levee inspections with California Department of Fish and Wildlife.
- Subventions Program FY 2016-2017 – The CVFPB approved \$12M for the FY 2016-2017 Funding Plan on August 26, 2016. CVFPB has executed nine work agreements.

URBAN FLOOD RISK REDUCTION

FRR Projects 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 State Plan of Flood Control (SPFC) facilities in the Central Valley; provide advanced mitigation for the SPFC to aid project delivery; and enhance ecosystems associated with the flood system. A primary responsibility of these programs is to collaborate and work closely with the U.S. Army Corps of Engineers (USACE) and local agencies to increase flood protection for urban areas. This Mega Program includes four programs; USACE Projects and Studies, Early Implementation Program (EIP), and Urban Flood Risk Reduction (UFRR).

USACE/CVFPB PROJECTS

The Central Valley Flood Protection Board (CVFPB), along with local agencies where applicable, participates with USACE to ensure that state flood management needs and mandates are met, and provides its required non-federal cost share funds and technical assistance to repair or upgrade the Central Valley's flood management systems. These congressionally authorized SPFC projects are being constructed to improve flood protection for urban or urbanizing areas; reduce flood risk in rural areas; reduce the risk to life, infrastructure, and property; and reduce the state's liability. The following are ongoing USACE/CVFPB projects:

American River Common Features (ARCF) Project

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

- No new information this month.

American River Watershed – Natomas Basin Project

The Natomas Basin Project was authorized in 2014 Water Resources Reform and Development Act. It includes significant improvements to the Natomas Basin levees resulting in a minimum of 100-year level of flood protection for the basin. This project in combination with other projects will provide the Natomas Basin with 200-year level flood protection.

- Comments returned to USACE on November 1, 2016, for Reach H 90% Plans and Specifications, Design Documentation Report, final real estate mapping, and Engineering Considerations and Instructions to Field Personnel.

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 October 1, 2016, is as follows:

Phases	Planning & Design	Construction
Preconstruction Engineering and Design	100%	N/A
Phase III – Control Structure	100%	99%
Phase IV – Approach Channel, Chute, & Stilling Basin	100%	97%
Phase V – Right Bank Stabilization	100%	11%
Phase V – Site Restoration	100%	81%
Project Overall	100%	98%

- ✓ Phase III: Granite Company continues finalizing closeout items on the Control Structure. Granite is coordinating with USACE and USBR regarding the pulling of the pin to determine the reason of the Hub noise. The pulling of the pin operation started on October 31, 2016, and investigation is still ongoing.
- ✓ Phase IV: Kiewit Company completed the wet-excavation work in the Approach Channel on November 4.
- ✓ Phase V-Site Restoration: Mass excavation work continues.
- ✓ Commissioning and O&M documents have been drafted. The wet commissioning is scheduled to take place between December 2016 and February 2017.
- ✓ JFP Turn Over schedule: (1) Financial Transfer is from May to July, 2017; (2) Physical Transfer is from November to June 2017; (3) Transfer Memos are from February to June 2017.

Folsom Dam Raise Project

The Folsom Dam Raise Project will provide flood damage reduction by increasing the reservoir storage capacity by 3.5 feet and performing structural modifications to the existing Folsom Dam tainter gates for operational safety.

- USACE and USBR are collaborating closely to address the Service Gates design issues.
- USACE brought on board Internal Subject Matter Experts (SMEs) to review the Service Gates design. DWR DSOD staff are assisting with this effort
- USACE is moving forward with embankment design (Dikes 1-4 and MIAD) with the plan to award the contract in December 2017. Dikes 4-6 65% design is scheduled to be completed December 2016.

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

The Lake Kaweah Enlargement Project was completed in 2006, and is near the closeout phase.

- No new information this month.

Marysville Ring Levee Improvement Project

The Marysville Ring Levee Project will provide greater than 200-year level of flood protection to the city of Marysville by constructing cut-off walls, levee strengthening, and reshaping of the existing levee systems surrounding Marysville.

- No new information.

South Sacramento County Streams Project

The South Sacramento County Streams Project will increase the flood protection level for south Sacramento County's urbanized area and areas to the south and east of the city of Sacramento.

- Erosion damages occurred along the recently completed bank slopes in Florin Creek due to early rain in October. A contract modification is being negotiated to address erosion issues by placing biodegradable fabric along the slopes. The work is anticipated to be completed before the end of this calendar year.
- Project team is continuing to address remaining issues including O&M easement acquisition, vegetation, pump station gage installation, and crediting, etc.

USACE/CVFPB Studies

CVFPB, along with local agencies where applicable, 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 SPFC facilities; reduce the risk to life, infrastructure, and property; and reduce the state's liability. The following are USACE/CVFPB studies:

American River Common Features (ARCF) General Reevaluation Report (GRR)

If implemented, the GRR plan will provide a 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.

- No new information this month.

Cache Creek Settling Basin Project GRR

This settling basin was initially constructed in 1937 and modifications were completed in 1993. As part of the federal authorization for the improvements completed in 1993, the project authorization specified additional improvements to be considered at year 25, or when the sediment trapping efficiency fell below 30 percent.

- No new information this month.

Central Valley Integrated Flood Management Study (CVIFMS)

This Watershed Study will identify federal interest in the Sacramento River Basin by identifying opportunities to reduce flood risk and protect floodplain and environmental assets.

- No new information this month.

Lower San Joaquin River Feasibility Study (LSJRFS)

The LSJRFS will evaluate feasible flood risk reduction alternatives focused in the city of Stockton and vicinity, identify a project having federal interest that is consistent with the Central Valley Flood Protection Plan and complete a Final Chief's Report.

- No new information this month.

Merced County Streams Project – Bear Creek GRR

This project will evaluate options to increase the Merced urban area level of flood protection from a 50-year to 200-year event.

- No new information this month.

Sacramento River GRR

The GRR will evaluate flood risk reduction alternatives within the Sacramento River Flood Control Project area, identify a project having federal interest that is consistent with the Central Valley Flood Protection Plan and complete a Final Chief's Report.

- U.S. Army Corps of Engineer (USACE) Sacramento District (SPK) submitted a SMART Planning 3X3X3 Rule Exemption (Waiver) Request to USACE South Pacific Division (SPD) in October for increased schedule and study costs for the Sacramento River GRR. If approved, the Waiver will require an amendment to the current Feasibility Cost Sharing Agreement between USACE and CVFPB and will be presented before the Board.

Success Reservoir Enlargement Project (SREP) GRR

The Success Reservoir is a multi-purpose facility built to provide flood control, water supply, and irrigation. USACE and the non-Federal sponsors intend to move forward with improvements which are intended to provide improved flood risk reduction, water supply, and irrigation improvements.

- No new information this month.

Sutter Basin Feasibility Study/Preconstruction Engineering and Design (PED)

The multipurpose study addressed levee improvement measures for existing levee systems protecting Yuba City and the surrounding communities in the Butte/Sutter basin, as well as environmental restoration and recreation opportunities. The study resulted in a federally authorized project. The Preconstruction Engineering and Design (PED) phase will start the design of the federal project that has not be already implemented by SBFCA.

- No new information this month.

West Sacramento Project GRR

The GRR-evaluated flood risk reduction alternatives within the West Sacramento area identify a project having federal interest that is consistent with the Central Valley Flood Protection Plan.

- No new information this month.

Woodland/Lower Cache Creek Feasibility Study

This study is a USACE, state, and city of Woodland coordinated effort to investigate the feasible 200-year level flood protection and risk reduction alternatives and opportunities for floodplain restoration, recreational enhancements, and ecosystem restoration for the city of Woodland and surrounding areas.

- No new information this month.

Yuba River Basin Project GRR

The Yuba River Basin Project GRR consists of increasing the Yuba River Basin flood protection level in Marysville, Linda, Olivehurst, and Arboga. The study is currently on hold.

- 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 of SPFC facilities. UFRR is based on competitively awarded 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 are EIP and UFRR projects:*

Knights Landing Levee Repair Project (EIP)

This project repaired 3.4 miles of levee along the left (east) bank of the Knights Landing Ridge Cut back to the USACE 1957 Design Profile.

- No new information this month.

Lathrop Study and Preliminary Design (UFRR)

This project has a long-term plan to fully comply with SB5 requirements, which is well beyond the RD-17 seepage project funded under EIP. The state is requiring the area to regain federal interest and meet the Central Valley Flood Protection Plan requirements, which will require looking at floodplain development and a multi-benefit project.

- No new information this month.

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

RD-17 levees have low safety factors due to under-seepage and through-seepage. These issues are being addressed by constructing seepage berms, slurry walls, and a setback levee to increase the flood protection level for south Stockton, Lathrop, and Manteca.

- The execution of Amendment No. 3 to the Funding Agreement between DWR and RD-17 was finalized by the Department of General Services on October 28, 2016. This is the final step in the process needed for this Amendment. Amendment No. 3 extends the expiration

date to June 30, 2020. This time extension is necessary to complete design, permitting, environmental, and construction activities associated with Phase III of this project.

Sacramento Area Flood Control Agency (SAFCA) – Levee Accreditation Project (UFRR)

SAFCA proposes levee improvements along 3-4 miles of levees along Arcade Creek and NEMDC in the Sacramento North area and 5-6 miles of levees along the Sacramento River between downtown and the town of Freeport. Improvements are required to meet requirements under the Urban Levee Design Criteria Program (ULDC) and FEMA standards.

- The draft work plan, which is part of the funding agreement, was reviewed and approved by DWR.
- Review and approval of funding agreement is expected to be completed before the end of this calendar year.
- SAFCA is planning to solicit bids for the North Sacramento Streams project in December and award in February 2017. 408 permit is on track to hit this target date.

SAFCA – Natomas Cross Canal Project (EIP)

This Natomas Levee Improvement Program project installed cutoff walls to prevent seepage, under-seepage, and raise the levee to improve the Natomas Basin's flood protection and create a 200-year minimum flood protection level.

- No new information this month.

SAFCA – Sacramento River East Levee Project (EIP)

This Natomas Levee Improvement Program project installed cutoff walls to prevent seepage, under-seepage, and raise the levee to improve the Natomas Basin's flood protection and create a 200-year minimum flood protection level. SAFCA completed components to element 12A (RM 67) along the Sacramento River and USACE will complete the remaining work.

- No new information this month.

San Joaquin Area Flood Control Agency (SJAFC) – Smith Canal Closure Structure Project (EIP & UFRR)

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 and meet ULDC requirements for 200-year flood protection to a portion of the city of Stockton.

- No new information this month.

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

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.

- No new information this month.

Three Rivers Levee Improvement Authority (TRLIA) – 200-year Goldfields Levee Project (UFRR)

This project proposes to construct a new levee south of the Goldfields (Yuba River) area to complete 200-year flood protection for the Yuba Basin east of the Feather River.

- No new information this month.

TRLIA – Feather River Levee Improvement Project (EIP)

This project resulted in a 200-year flood protection level for Highway 65 and 70, and also improved flood protection for Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes one of the largest setback levees west of the Mississippi River, and creates 1,760 acres for on-site mitigation, agricultural use, and habitat.

- Funding Agreement, Amendment 4 was signed by all parties on October 15 and executed by the Department of General Services on November 3, 2016. This Amendment 4 will allow a one-year time extension to complete real estate activities associated with this project.

TRLIA – Upper Yuba River Levee Improvement Project (EIP)

This project will result in a 200-year flood protection level for Highway 65 and 70, and will also improve flood protection for Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes a portion of the Yuba River's south levee, as well as 200-year improvements to the Western Pacific Interceptor Canal.

- No new information this month.

West Sacramento Area Flood Control Agency (WSAFCA) – Design (EIP)

Design agreement funded all design activities for project elements in the North basin and majority of the project design in Southport.

- No new information this month.

West Sacramento Area Flood Control Agency (WSAFCA) – Construction (EIP & UFRR)

Construction for the California Highway Patrol Academy, Rivers, and I-Street Bridge projects in the north basin is complete. These projects corrected through-seepage and foundation under-seepage that had excessive hydraulic gradients, embankment instability, and erosion problems. The Southport Improvement Project will construct flood risk reduction measures along approximately 5.6 miles of the Sacramento River right (west) bank levee. The project consists of approximately 1.6 miles of strengthen-in-place measures and 4 miles of setback levee. For setback levee areas, the work will include the breaching and degrading of the existing levee and allow for natural restoration of the Sacramento River floodplain.

- At the November 29, 2016 Special Meeting of the WSAFCA Board, a resolution was passed approving plans and specifications, rejecting all bid protests, and awarding the construction contract for the Southport Levee Improvement Project.

Woodland Study and Preliminary Design (UFRR)

This project's long-term objective is to provide flood protection to the city of Woodland while improving flood system elements in Yolo County. The state is requiring the city to continue to work with USACE to determine federal interest in the project and to meet Central Valley Flood Protection Plan requirements. The city is working to develop a multi-benefit project which will consider deep floodplain development, existing maintenance issues, and residual risk measures.

- No new information this month.

SMALL COMMUNITIES FLOOD RISK REDUCTION PROGRAM

The Small Communities Flood Risk Reduction (SCFRR) Program was created as a result of the adoption of the 2012 Central Valley Flood Protection Plan (CVFPP). The SCFRR Program objective is to reduce flood risks for small communities protected by the State Plan of Flood Control (SPFC) facilities. Small communities are defined as developed areas with between 200 and 10,000 residents, as described in the CVFPP. The SCFRR Program supports the continued viability of small communities within the SPFC Planning Area to preserve cultural and historical continuity and important social, economic, and public services to rural-agricultural populations, agricultural enterprises, and commercial operations.

- The Proposal Solicitation Package (PSP) application period closed on November 2, 2016, and DWR received 37 applications from 14 counties. DWR has commenced the PSP review process, starting with initial eligibility screening and review of applications to ensure all requested information has been provided. DWR will contact applicants to request missing or additional information as needed to complete the review process.

SYSTEMWIDE FLOOD RISK REDUCTION PROGRAM (SFRR)

Consistent with the Central Valley Flood Protection Plan, SFRR works with in coordination with local and federal agencies to implement large-scale flood system improvements that have cross-regional benefits and that when packaged together offer multi-benefit opportunities.

Lower Elkhorn Basin Levee Setback (LEBLS) Project

This project will reduce flood risk by increasing the capacity of the Yolo and Sacramento Bypasses, and lowering flood stages in the Sacramento River. New areas of inundated flood plain will result from the construction of the levee setback that may benefit ecosystem function in the future.

- **Coordination Efforts** – DWR is continuing to work with local flood management agencies, landowners, farmers, and environmental NGOs to develop project design details that will be used for CEQA/NEPA analysis. An overview of the Lower Elkhorn Levee Setback Project was given to the Yolo County Water Resources Association (WRA) on Monday, November 14, 2016. The Water Resources Association of Yolo County (WRA) is a consortium of entities authorized to coordinate and facilitate solutions to water issues in Yolo County. The WRA is governed by a Board of Directors which represents each of the member agencies: city of Davis, city of West Sacramento, city of Winters, city of Woodland, county of Yolo, Dunnigan Water District, Reclamation District 108, Reclamation District 2035, University of California in Davis, Yolo County Flood Control & Water

Conservation District. An overview of the Lower Elkhorn Levee Setback Project was also given to the CVFPB Coordinating Committee on Wednesday, November 16, 2016.

- **Tribal Consultation** – Meetings are being calendared in early December with Shingle Springs Band of Miwok Indians, Lone Band of Miwok Indians, and Wilton Rancheria.

Other Systemwide Projects

Folsom Dam JFP, Folsom Dam Raise, and Sacramento River GRR are covered under the Urban Flood Risk Reduction Mega Program above.

FLOOD CORRIDOR PROGRAM (FCP)

The FCP is a 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 the 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.

- No new information this month.

LOCAL LEVEE ASSISTANCE PROGRAM (LLAP)

The LLAP was created to help fund projects implemented by flood management agencies, mainly outside of the Sacramento-San Joaquin Delta. The goals of the LLAP include minimizing flood risk; identifying deficiencies in flood control structures and levees; by eliminating high flood insurance costs related to FEMA unaccredited levees. LLAP projects must fulfill at least one of the two goals of inspection and evaluation of the integrity and capability of existing flood control project facilities, or improvement, construction, modification, relocation of flood control levees, weirs, or bypasses, including repair of critical bank and levee erosion.

- The Department of Finance (DOF) is performing a financial audit of two levee evaluation project grants with the Santa Clara Valley Water District, each with a contract value less than \$420,000.

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 reduction, and flood risk reduction in the Yuba, Feather River and Colusa Basin (including wildlife habitat enhancement and/or agricultural land preservation).

- No new information this month.

SAN JOAQUIN RIVER RESTORATION PROJECT (SJRRP)

The Division of Flood Management has created the SJRRP to assist the United States Bureau of Reclamation (USBR) 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. USBR, 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 selected fish species 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, as well as identifying potential remedies to address increased flood risks under Restoration flows in coordination with the CVFPP.

- No new information this month.

FLOOD SYSTEM OPERATIONS AND MAINTENANCE (FSO&M)

FSO&M focuses on maintaining system features such as levees, hydraulic control structures, pumping plants, bridges, and channels to continue to achieve risk reduction benefits the system was designed to provide riverside communities, rural areas 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 State Plan of Flood Control (SPFC) identified in the California Water Code (CWC). Local agencies and the state work closely with the CVFPB, USACE, and environmental resource agencies to ensure that operations 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 operations and maintenance activities, including SPFC channel evaluations, mercury characterization and control implementation, and channel conveyance capacity deficiency correction. Routine operations and maintenance requirements are **funded by the General Fund.***

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 DWR is assigned responsibility for monitoring, evaluating and reducing total mercury and 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.

The Channel Evaluation and Rehabilitation Program reports progress within the following components:

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

INSPECTION AND EVALUATION:

Cache Creek and Cache Creek Settling Basin Hydraulic Model

- No new information this month.

Feather River Hydraulic Model

- No new information this month.

Llano Seco Riparian Sanctuary (Butte Basin 2-D Model)

- No new information this month.

Mercury Characterization Studies

- Staff met with DWR's USGS and UCD partners to coordinate flow, sediment, and mercury sampling activities for the start of Water Year 2017. The collected data will be input into sediment and mercury trap efficiency models and reported to the CVRWQCB with the second deliverable for TMDL compliance due in October 2017.

Middle Creek Project (MCP)

- No new information this month.

Natomas East Main Drainage Canal (NEMDC)

- No new information this month.

ROUTINE OPERATIONS AND MAINTENANCE:

The Maintenance Yards' routine channel maintenance is limited to vegetation management through such methods as spraying, mowing, and trimming. These activities are planned at the end of flood season and are completed before the next flood season. Although DWR manages large areas in channels, only a small percentage is actively maintained by DWR. Reporting on planned activities in actively maintained areas started on November 1, 2014, and ended on

October 31, 2015. Additional work that is completed as needed includes removing debris, removing trees, removing sediment, and removing beaver dens. These activities are reported as they are completed.

The following activities were completed in the month of November:

- At Butte Creek, vegetation spot spraying is complete.
- At Elder Creek, vegetation spot spraying is in progress.
- At Lake of the Woods, vegetation mowing is in progress.
- At Lindo Creek, 35 cubic yards of debris was removed.
- At Sacramento Bypass, vegetation broadcast spraying is in progress.
- At Sycamore Creek, vegetation spot spraying is in progress.

NON-ROUTINE ACTIVITIES:

- No new information this month.

FLOOD CONTROL FACILITIES EVALUATION AND REHABILITATION (FCFER)

The FCFER program includes evaluating, operating, maintaining, and repairing Sacramento River Flood Control Project facilities defined in CWC Section 8361 and state assurance to the federal government. DWR is responsible for operating and maintaining 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 functionality and facility condition. Rehabilitation and improvement work includes proactive repair of known and documented problems with prioritization based on flood risks and safety.

The Flood Control Facilities Evaluation and Rehabilitation Program reports progress within the following components:

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

INSPECTION AND EVALUATION:

Two times a year, once immediately after flood season and once prior to flood season, the Flood Maintenance Office (FMO) conducts inspections of structures, bridges, and pipes that penetrate the levee. Deficiencies are identified with corrective actions. Minor deficiencies can be remedied through maintenance practices while larger issues will require a project level effort.

For the month of November:

- No new information this month.

ROUTINE OPERATIONS AND MAINTENANCE:

The Maintenance Yards' routine maintenance for flood facility structures varies based on the type of structure. Pumping plants require periodic mechanical and electrical maintenance while weir maintenance primarily consists of concrete repairs. Additional work that is completed as needed includes removing debris and sediment, and emergency repairs. These activities are reported as they are completed.

In the month of November:

- At Knights Landing Outfall Gates, the downstream catwalk is being repaired.

NON-ROUTINE PROJECTS:

Collecting Canal Bridge CC-2 and CC-4 Repair

- No new information available for this month.

West Borrow Canal Bridge WL-1 Evaluation

- A bridge support pier was recently observed by the Sutter Maintenance Yard to be failing. The pier is leaning and disconnected from the deck. FMO is currently working with DOE Real Estate office and FMO legal support to determine the responsible party to repair the bridge. The bridge was rebuilt by DWR in the early 1980s, but the property was sold to CDFW and then to a private entity.

Knights Landing Outfall Gates Fish Barrier

- No new information this month.

Sacramento Maintenance Yard (SMY) Paving Project

- Staff performed a field survey to determine the status of the existing storm drainage system within SMY related to the current project study. Storm drain pipe sizes and invert elevations were measured and recorded.

Bryte Yard Groundwater Investigation

- Staff coordinated with Project Geology to submit a Well Destruction Work Plan to the CVRWQCB as necessary to complete the final step for receipt of "no further regulatory action required" status for the site. Following receipt of the CVRWQCB-approved plan, staff will coordinate with Project Geology to destroy each remaining well at the site and prepare the requisite report documenting the destructions.

Butte Slough Outfall Gates (BSOG)

- No new information this month.

Completion Contract

- This is a project to complete some items that were not included in the contracts for recent projects. The completion contract covers the Weir 2 project, Willow Slough project, Pumping Plant project, and Knights Landing Outfall Gates (KLOG) project. The contract was awarded to Valentine Construction with the notice to begin work on December 24, 2016. Construction has started with the pumping plants. Work on the Willow Slough Weir, Weir 2, and KLOG will follow.

LEEVE OPERATIONS AND MAINTENANCE COMPONENTS

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 operating and 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.”

The Levee Operation and Maintenance Program reports progress within the following components:

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

ROUTINE OPERATIONS AND MAINTENANCE:

The Maintenance Yards’ routine levee maintenance includes vegetation management through spraying, mowing, and trimming, maintaining levee geometry through dragging levee crown roads, dragging levee slopes, repairing minor erosion, and maintaining waterside and landside toe roads where they exist, protecting levees from rodent damage and repairing damage that has occurred through FMO’s Rodent Abatement/Damage Repair and Rehabilitation Program, and removing or remedying encroachments. Reporting on routine maintenance activities started on November 1, 2014, and ends on October 31, 2015. Additional activities that are completed as needed include repairing or replacing gates, barricades, and mile markers; placing gravel on crown roads; and repairing or replacing pipes that penetrate the levee. These activities are reported as they are completed.

The following activities were completed in the month of November:

- At the Colusa Bypass levees, the following activities occurred:
 - 4 miles of vegetation cutting and limbing was completed;

- Vegetation broadcast spraying is in progress.
- At the East Levee of the Sacramento River, the following activities occurred:
 - 18 rodent dens were fumigated;
 - 1 pipe repair is complete;
 - 1 erosion repair is complete;
 - 15 miles of vegetation broadcast spraying is complete;
 - 0.3 miles of vegetation cutting and limbing is complete.
- At the East-West Interceptor canal, the following activity occurred:
 - Sign repair and replacement is ongoing.
- At the East Yolo Bypass Levee, the following activities occurred:
 - Pipe inspections are ongoing;
 - Vegetation broadcast spraying is ongoing.
- At Maintenance Area (MA) 1, the following activities occurred:
 - 1 mile of vegetation cutting and limbing was completed;
 - 1 erosion repair was completed;
 - 17 miles of vegetation broadcast spraying was completed.
- At MA 3, the following activity occurred:
 - Sign repair and replacement is in progress.
- At MA 5, the following activities occurred:
 - Vegetation spot spraying is in progress;
 - Road grading is in progress.
- At MA 9, the following activities occurred:
 - 8 miles of vegetation mastication is complete;
 - Rodent baiting is in progress.
- At MA 12, the following activities occurred:
 - 3 rodent dens were fumigated;
 - 1 pipe repair was completed;
 - 11 miles of vegetation spot spraying is complete;
 - 22 miles of vegetation broadcast spraying is complete.
- At MA 13, the following activity occurred:
 - 1 gate was repaired.
- At Moulton Bypass Levees, the following activity occurred:
 - 2 miles of vegetation cutting and limbing was completed.
- At Putah Creek, the following activities occurred:
 - Rodent baiting is in progress;
 - Vegetation broadcast spraying is in progress.
- At West Yolo Bypass, Units 1-3, the following activity occurred:
 - Vegetation broadcast spraying is in progress.
- At West Yolo Bypass, Unit 4, the following activity occurred:
 - Vegetation broadcast spraying is in progress.
- At Willow Slough Bypass, the following activities occurred:

- Rodent baiting is in progress;
- Vegetation broadcast spraying is in progress.

NON-ROUTINE PROJECTS:

- No new information this month.

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 CVFPP-SSIA. 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.

Small Erosion Repair Program (SERP)

- Construction to repair erosion at levee mile 4.6, along the Sacramento River just northeast of the city of Colusa, started October 10, 2016. The construction and final hydro-seeding of the site was completed on October 27, 2016. Vegetation installation at the site, riverward of the levee, is planned to start in the next two weeks.

Deferred Maintenance Project (DMP)

- The State Legislature has authorized \$100 million of General Funds to address flood risks associated with the deferred maintenance of the aging State Plan of Flood Control (SPFC) levees and appurtenant structures in the Sacramento and San Joaquin River basins. Funds became available with the passage of the Fiscal Year 2016/2017 budget and must be expended or committed by June 30, 2018, and liquidated by June 30, 2019. DFM has developed the DMP to evaluate and repair levee penetrations, help implement statewide rodent damage mitigation, and perform specific deferred maintenance actions for DWR maintenance yard facilities. Work will address known threats to levee integrity, enhance emergency response capabilities, and ultimately reduce the potential for catastrophic flooding.
- Field reconnaissance has begun (September 2016) with the goal of categorizing gravity drain pipes so contracts and agreements can be developed dependent upon actual field conditions (access, environmental constraints, etc.).

LEEVE REPAIRS

The Levee Repairs Program in the Division of Flood Management, Flood Maintenance Office, makes repairs to the State Plan of Flood Control (SPFC) 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 of the Sacramento and San Joaquin River Systems 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 a cost-sharing partner and manages the state's responsibilities for the SRBPP and PL 84-99 projects on behalf of the CVFPB.

Flood System Repair Project (FSRP)

- As of November 2016, FSRP has completed a total of six construction projects consisting of one proactive erosion repair in State Maintained Area ST008, and five all-weather access road repairs in RD 1500, RD 1600, RD 2063, RD 2085, and the Lower San Joaquin Levee District (75 miles total). The total cost of these projects was approximately \$5.4 million, which includes \$700,000 in local cost share. Additionally, FSRP has currently committed approximately \$45.4 million for all-weather access road improvements and levee repair projects to rural portions of the SPFC. This amount includes approximately \$5.3 million in local-share contributions. These committed projects are in various stages of permitting/design/construction. Projects supported with these committed funds include 10 all-weather levee access road repair projects (86 miles total), 10 critical erosion/seepage/stability repair projects (total length of 8,500 lf) and one control structure repair project. FMO staff continues to develop work agreements to commit additional FSRP funding for these types of rural levee repair projects.

Sacramento River Bank Protection Project (SRBPP)

- In November 2016, USACE completed construction on an 800 foot long SRBPP rock revetment erosion repair project on the left bank of the Sacramento River at river mile 16.8. Final site walkthrough was conducted in late November, and final project closeout will be completed in December 2016.
- In November 2016, construction of a setback levee on the left bank of Cache Creek at levee mile 3.4 was completed. This DWR-led project will construct a new 1,000 foot long setback levee to accommodate the presently eroding bank and original levee alignment. Final project closeout will occur in December 2016.

Federal Public Law 84-99 Emergency Repair Project (PL 84-99)

- No new information this month.