

**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 Mapping project. The project includes the development of hydraulic models and interface tools to predict flood inundation timing and extents in near real-time. Staff have completed HEC-RAS 2D training that will be used to develop and enhance hydraulic models for the project.

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 September 30, which is the end of Water Year 2016, statewide hydrologic conditions were as follows: precipitation, 110 percent of average to date; runoff, 95 percent of average to date; and reservoir storage, 80 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2016, observed through September 30, 2016 was about 17.4 million acre-feet (MAF), which is about 98 percent of average. In comparison to Water Year 2015, the observed Sacramento River Region unimpaired runoff through September 30, 2015 was about 9.2 MAF, or about 51 percent of average.

On September 30, the Northern Sierra 8-Station Precipitation Index Water Year total was 57.9 inches, which is about 116 percent of the seasonal average to date and 116 percent of an average water year (50.0 inches). During September, the total precipitation for the 8-Stations

was 0.0 inches. Last year on September 30, the Water Year 2015 seasonal total for the 8-Stations was 37.2 inches, or about 74 percent of average.

On September 30, the San Joaquin 5-Station Precipitation Index Water Year total was 40.0 inches, which is about 98 percent of the seasonal average to date and 98 percent of an average water year (40.8 inches). During September, the total precipitation for the 5-Stations was 0.0 inches. Last year on September 30, the Water Year 2015 seasonal total for the 5-Stations was 19.0 inches, or about 47 percent of average. San Joaquin River Region unimpaired runoff for Water Year 2016, observed through September 30, 2016, was about 6.1 million acre-feet (MAF), which is about 87 percent of average.

On September 30, the Tulare Basin 6-Station Precipitation Index Water Year total was 25.8 inches, which is about 88 percent of the seasonal average to date and 88 percent of an average water year (29.3 inches). During September, the total precipitation for the 6-Stations was 0.0 inches. Last year on September 30, the Water Year 2015 seasonal total for the 6-Stations was 13.5 inches, or about 46 percent of average. Tulare Lake Region unimpaired runoff for Water Year 2016, observed through September 30, 2016, was about 2.0 million acre-feet (MAF), which is about 60 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 09/30/2016					
Station	October 1 to Date 2015-2016	% Average	Season to Date 2014-2015	% Average	% Average Oct 1 – Sep 30
Mount Shasta	40.97	94	35.32	81	94
Eureka	44.02	109	30.74	76	109
Redding	37.30	108	23.67	68	108
South Lake Tahoe	22.22	109	14.01	69	109
Sacramento Executive Airport	16.14	87	15.45	84	87
Santa Rosa (Sonoma Co AP)	30.43	84	22.77	63	84
San Francisco	22.16	94	17.70	75	94
Stockton	16.60	118	10.68	76	118
Yosemite	36.10	95	18.50	49	95
Monterey	21.54	134	14.61	91	134
Paso Robles	7.37	58	8.45	66	58
Fresno	14.33	125	6.62	58	125
Bakersfield	5.44	84	5.29	82	84
Death Valley	1.68	71	1.05	45	71
Los Angeles	6.35	43	11.06	74	43
Riverside	5.17	42	7.70	62	42
Palm Springs	3.41	59	2.64	46	59
San Diego	8.05	78	11.27	109	78

Key Reservoir Storage (1,000) AF) as of 09/30/2016								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	969	1,666	58	2,448	40	---	1,479
Shasta Lake	Sacramento	2,811	2,725	103	4,552	62	-1,741	1,741
Lake Oroville	Feather	1,619	2,188	74	3,538	46	-1,732	1,919
New Bullards Bar Res	Yuba	645	593	109	966	67	-266	321
Folsom Lake	American	306	554	55	977	31	-671	671
New Melones Res	Stanislaus	528	1,343	39	2,400	22	-1,745	1,892
Don Pedro Res	Tuolumne	1,319	1,371	96	2,030	65	-453	711
Lake McClure	Merced	387	464	83	1,025	38	-465	638
Millerton Lake	San Joaquin	231	210	110	520	44	-290	289
Pine Flat Res	Kings	160	338	47	1,000	16	-840	840
Isabella	Kern	96	187	51	568	17	-208	472
San Luis Res	(Offstream)	510	955	53	2,041	25	---	1,529

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for November 2016, issued October 20, 2016, suggests average precipitation for Northern and part of Central California. Below average precipitation is expected for Southern and part of Central 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.

At the September Board meeting, staff made a presentation regarding the ten-year anniversary of the Reservoir Forecast-Coordinated Operations component of the Flood Emergency Response Program.

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.

During October, staff conducted Preseason Flood Coordination Meetings in Sutter, Napa, Sacramento, San Joaquin, Humboldt, and Shasta counties. These meetings were the last of twelve held across the State during September and October to meet with local, State, and federal flood emergency response partners and discuss annual flood preparedness activities.

Construction at DWR's rock storage site in Rio Vista was completed on October 5, 2016. The site is a part of the Delta Flood Emergency Preparedness, Response and Recovery Facilities Improvement Project. Improvements include 3 rock storage areas, including over 300,000 tons of rock currently on-site, stored K-rail and a staging area with electrical hook-ups for communications trailers. Completion of this project provides DWR with additional infrastructure and stored supplies to quickly respond to and recover from major disasters in the Delta.

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 adding new response options to the interface. Staff participated in a hands-on workshop on October 20 to practice using the tool's new features. Attendees at the workshop included staff from the Bay Delta Office, SWP Operations Control Office, Delta Levees Office, and USBR Central Valley Operations Office. 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.

Statewide Flood Emergency Response Grants- Round 1

Staff continued to manage the 14 executed grant contracts with local agencies to improve their flood emergency response capabilities. Of the \$5 million awarded, approximately \$4 million has been invoiced for by the grantees. Five of the grant projects have been completed and closed-out. The deliverables from the completed grant projects include Emergency Operations Plans, Flood Contingency Maps, and Web-applications. These deliverables are being collected and organized for reference during high water events.

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.

The SIFMP program is currently working to further define ways to implement the *California's Flood Future* recommendations. A primary focus is on development of a "water management effectiveness framework," which is the foundation of providing for investment in flood and water management. This framework will provide for a long-term, outcome-based approach to flood risk management throughout California within the context of overall water management investment. In addition, the program has wrapped up an expanded information gathering effort, in which approximately 240 flood and water management agencies were interviewed. A draft report titled *Investing in California's Flood Future* is being developed that will describe the state's investment priorities and finance options necessary to support the programs and projects that help improve flood management and reduce residual flood risk using an outcome-based approach. This report supports *Actions 8 and 10* of the *California Water Action Plan*. Several Technical Attachments will provide back-up information for the main report. The work associated with the *Investing in California's Flood Future* effort is being used in the development of the *California Water Plan Update 2018*.

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

- October 7, 2016 – Staff briefed Director Cowin on the 2017 Central Valley Flood Protection Plan Update and sought approval to distribute the Working Draft Document for Stakeholder review in late October, 2016. Approval was granted.
- October 28, 2016 – DWR's Flood Planning Office released the Working Draft 2017 CVFPP Update for Central Valley Flood Protection Board member and stakeholder review. The Working Draft is available at the following site:
<https://d3.water.ca.gov/owncloud/index.php/s/mmTY8iBCMAeviSG>. DWR is requesting that stakeholders provide a "red flag" review of the Working Draft 2017

CVFPP Update. All comments should be sent via email to Sami Nall at cvfmp@water.ca.gov no later than **Monday, November 28, 2016**.

- Stakeholder comments received on the Working Draft 2017 CVFPP Update will be 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 engagement meeting with the Wilton Rancheria Tribe occurred on October 20. Staff discussed an overview of the 2012 CVFPP followed by the process for the 2017 CVFPP Update.
- Draft biological and cultural impacts analyses have been prepared and are being reviewed internally.
- A program description for the Supplemental PEIR is being drafted based on the stakeholder draft of the CVFPP.

2016 State Plan of Flood Control Descriptive Document Update

- Comments from the internal review draft have been incorporated and the next round of reviews is currently being conducted by management. Management review is expected to be complete by early November. Management comments will be addressed to prepare a public draft in late November- early December.

2017 Flood System Status Report Update

- A working draft was received in October and reviews are currently being conducted internally prior to Flood Planning Office chief review. Current review is expected to be complete by early November. Management comments will be addressed to prepare a public draft in late November - early December.

Basin-wide Feasibility Studies

- DWR plans to release a revised draft of the Sacramento River BWFS in early November 2016. DWR released a stakeholder review draft of the San Joaquin River BWFS October 17, 2016. Comments should be sent to DWR Flood Planning Office via email to Sami Nall at Sami.Nall@water.ca.gov by close of business on Wednesday, November 23, 2016. A revised draft is expected later in 2017. Relevant information and data from the basin-wide studies is being incorporated into the 2017 CVFPP.

Basin-Wide Feasibility Study Atlases

- No new information this month.

Regional Flood Management Planning (RFMP) Phase 2

October 28, 2016 – DWR’s Flood Planning Office released the Working Draft 2017 CVFPP Update for stakeholder review. DWR anticipates ongoing involvement and review comments from the six 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

- No new information this month.

Advance Mitigation Projects

Bullock Bend Salmonid Conservation Bank

Management and staff from the Floodway Ecosystem Sustainability Office joined Acting Division Chief Eric Koch at the grand opening celebration of the Bullock Bend Mitigation Bank in northern Yolo County. At this event, the farm berm was breached reconnecting the floodplain on this 119 acre parcel along the Sacramento River to provide valuable rearing habitat for outmigrating salmon. Representatives from federal, state and local government, RD 108 and landowners participated in this event. FES partially funded this mitigation bank under the Conservation Framework and Strategy Guidelines. The bank will provide 57.5 advance mitigation credits to use by DWR and other LMA’s to offset impacts of improvements to State Plan of Flood Control facilities. DWR has already received 17.42 credits. Westervelt Ecological Services constructed the mitigation bank and is responsible for long-term maintenance of this project.

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/.

Update on briefing County Supervisors on the 2017 Update to the CVFPP

DWR leadership has emphasized the importance of educating and engaging with county supervisors on the 2017 Update to the Central Valley Flood Protection Plan (CVFPP) in advance of the December 2016 release of the Public Draft. In October, as part of DWR’s ongoing

stakeholder engagement activities, the department began conducting small group briefings with county supervisors and/or their staff to provide an informal overview of the 2017 CVFPP Update; review county, regional and system-wide flood policy issues; discuss the 2017 CVFPP Update's investment strategy; discuss local priorities and concerns related to flood risk management; and identify requests for additional information. Five such meetings have been held to date with supervisors in Butte, Yolo, Sutter, Colusa and Sacramento counties. The meetings have helped to further identify local interests, priorities and concerns that could be addressed during future briefings or presentations.

DWR is committed to working closely with local government and partners. Additional briefings with supervisors in Solano and San Joaquin counties are being scheduled for November. Depending on staffing availability, future briefings with other counties within the Sacramento and San Joaquin basins may also be scheduled.

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.

- October 5, 2016 - Staff participated in a workgroup meeting of the Agricultural Floodplain Ordinance Task Force. Consistent with the state's desire to see agriculture as one of the various best-uses for floodplains, final edits were discussed on a proposed technical memorandum that is planned to be submitted to FEMA regarding updating NFIP requirements for ag-related structures.
- November 16, 2016 - Staff will participate in an Agricultural Floodplain Ordinance Task Force workgroup meeting.

FLOOD RISK REDUCTION PROJECTS

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 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:

- No new information this month.

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 were due 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.
- Reach I Contract 1 real estate package certification was completed on October 27, 2016, excluding Disposal Sites and Mitigation at Novak Site which will be certified by SAFCA.

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%	95%
Phase V – Right Bank Stabilization	100%	11%
Phase V – Site Restoration	100%	63%
Project Overall	100%	96%

- ✓ 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 will occur on Monday, October 31st.
- ✓ Phase IV: Kiewit Company continues with wet-excavation work in the Approach Channel.
- ✓ Phase V-Site Restoration: Mass excavation work continues.

- ✓ Commissioning and O&M documents have been drafted. The wet commissioning is scheduled to take a place in January 2017.
- ✓ JFP Turn Over schedule: (1) Financial Transfer is from May-July, 2017, (2) Physical transfer is from November to June 2017, (3) transfer memos is from February-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.

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.

- The issue regarding U.S. Army Corps of Engineer (USACE) Headquarter concerns with the Project Partnership Agreement (PPA) amendment being delayed due to concerns over cultural resource issues has been resolved. The PPA will go on for Assistant Secretary of the Army 50 day review.

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.

- A pre-final inspection walk-through took place on October 5, 2016. Numbers of insignificant deficiencies were identified and are being corrected by the contractor.
- At the October 28th CVFPB meeting, the Board approved transfer of the completed portions of the South Sacramento County Streams Project, along with the interim operation and maintenance manual (O&M), to the local maintaining agencies (LMA's).

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 a 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.

- No new information this month.

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.

- No new information this month.

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.

- SAFCA has submitted the 100% plans and specifications for the North Area Streams Project and it is expected to solicit bids in the month of October 2016.
- SAFCA submitted 65% design package for the SREL portion of the project and it is currently being reviewed by the agencies. The comments are due by October 14, 2016.

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 (SJAFA) – 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 and delivered to DGS on October 14, 2016, for final approval. 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.

- The Southport project is currently out to bid by WSAFCA. Bids are due to be opened on November 3, 2016.
- The Funding Agreement Amendment to add additional scope and funds to the existing contract has been executed by WSAFCA and is now being executed internally within DWR and DGS.

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.

- The Funding Agreement has been executed by the city of Woodland and is now being executed internally within DWR and DGS.

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.

- All interested communities have until close of business on November 2, 2016, to submit their Proposal Solicitation Package (PSP) applications for acceptance and priority ranking by

DWR. Notification email reminders have been sent to the FloodSAFE and Small Communities email lists, in addition to all of the stakeholders who participated at the two public workshops in late 2015.

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.

- **30% design package** – DWR submitted the 30% design package for the LEBLS project to USACE and CVFPB on October 21. This submittal included a preliminary set of plans and a preliminary Design Document Report that gave USACE and CVFPB a chance to review and comment on the design development approach and preliminary analysis for hydrology and hydraulics, geotechnical, civil, and environmental compliance. A meeting to discuss the package contents and to coordinate comments and responses is being scheduled.
- **408 Permit for Geotechnical Investigations** – A supplemental permit for investigations in the existing levee is currently being processed.
- **Environmental Documentation** - Surveys to support CEQA/NEPA document development have been underway, and the majority have been completed. A Geoarchaeological Sensitivity Assessment and Work Plan was prepared that includes a desktop survey of cultural resources and a plan to conduct a subsurface evaluation in the field. This will consist of a series of test excavations with observations and data collection, and is planned for the first week of November. The results of this evaluation will aid in identification and avoidance of impacts to buried cultural resources.
- **Tribal Consultation** – DWR, in coordination with USACE, has notified Native American Tribes of the Lower Elkhorn Basin Levee Setback Project (Project) and requested information on potential tribal cultural resources in the Project area. There are nine tribes that may have traditional and cultural affiliations within the Project area. Three letters have been sent to the nine tribes from late May 2016 to late September 2016. DWR met with the United Auburn Indian Community (UAIC) on October 19, 2016, to discuss the project and the planned test excavations. The UAIC and DWR are continuing to consult regarding assessment of tribal cultural resources for the Project, and possible tribal monitoring during ground disturbing activities. The Lone Band of Miwok Indians has also requested consultation on the Project. Follow-up emails were sent on October 26, 2016, to all other tribes that have not yet responded to the three letters previously sent.

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.

- DWR is preparing to solicit the last PSP for this program in early 2017. Approximately \$15 million will be available to commit to new projects in 2017.

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.

- DWR is actively communicating with awardees to execute contract agreements for the remaining \$15.3 million in 13 new projects from 6 agencies statewide.

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).

- Two additional projects are nearing closure this month, leaving only three remaining projects set to close out in spring 2017. The program will have expended its full \$70 million Proposition 13 allocation and will close completely in July 2017.

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)

- Staff began coordinating with IRWM Northern Region Office (NRO) engineering staff to develop Channel Management Plans for Middle Creek and its tributaries. NRO will develop a scope of work by November 2016 to prioritize select MCP channels and perform hydraulic modeling to develop alternatives for maintenance, making recommendations for maintenance to be done starting in 2017. Other deliverables will include individual Channel Management Plans (maintenance recommendations) for respective channels, the supporting CAD/GIS files, and documentation on the hydraulic modeling conducted to develop the maintenance alternatives.

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 October:

- At Big Chico Creek, debris removal is in progress.
- At Butte Creek, 996 acres of vegetation mowing is complete.
- At Fremont Weir Channel, vegetation mowing is in progress.
- At Lake of the Woods, vegetation mowing is in progress.
- At Lindo Creek, 40 cubic yards of debris was removed.
- At Little Chico Creek, 20 cubic yards of debris was removed.
- At Natomas East Main Drain, 4 miles of the channel was mowed.
- At O'Connor Lakes, 125 acres of vegetation mowing is complete.
- At Sacramento Bypass, vegetation cutting and limbing is in progress.
- At Sutter Bypass, rodent depredating is in progress.
- At Tisdale bypass, rodent depredating 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 October:

- Middle Creek Pumping Plant winter inspection was completed.

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 October:

- No new activities were completed.

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

RD 108 sponsored a project this past year to modify the existing Knights Landing Outfall Gates by adding a fish screen barrier to the Sacramento River side of the gates. FMO was charged with long-term operations and maintenance. The project was completed last winter. On September 3, 2016, there was a structural failure of the fish screen hoist structure. All parties involved have had an opportunity to investigate the failed structure in place. FMO is administering the work through DOE by amending an existing contract. Valentine Construction is completing the job of removing the failed screen and transporting it to the Sacramento Maintenance Yard where it will be available again to all interested parties who wish to

investigate the failure. The salvage operation started on Friday, October 7, 2016, with the assistance of a crane and a dive team. The work was completed on October 11, 2016.

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)

Environmental staff is working with state and federal regulatory agencies to try and obtain long term operations and maintenance coverage for the proposed rehabilitation work. DWR Real Estate continues to work on access and right of entry agreements. Additional electrical updates are being incorporated into the design plans.

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 October:

- At Cache Creek, the following activities occurred:
 - Pipe inspections were completed,
 - One gate repair was completed, and
 - Vegetation mowing is in progress.
- At the East Levee of the Sacramento River, the following activities occurred:
 - Three rodent dens were backfilled,
 - 0.5 miles of vegetation cutting and limbing is complete,
 - One encroachment has been removed, and
 - One erosion repair is in progress.
- At the East Levee of the Sutter Bypass, the following activities occurred:
 - Vegetation spot spraying is in progress, and
 - Rodent baiting is in progress.
- At the East-West Interceptor canal, the following activity occurred:
 - One sign was replaced.
- At the East Yolo Bypass Levee, the following activity occurred:
 - Pipe inspections were completed.
- At Maintenance Area (MA) 1, the following activity occurred:
 - 7 miles of vegetation dragging was completed.
- At MA 3, the following activities occurred:
 - Rodent baiting is in progress, and
 - Signs repairs are in progress.
- At MA 5, the following activity occurred:
 - Rodent baiting is in progress.

- At MA 9, the following activities occurred:
 - 112 acres of vegetation mowing is complete, and
 - Rodent baiting is in progress.
- At MA 13, the following activities occurred:
 - Rodent baiting is in progress, and
 - Vegetation spot spraying is in progress.
- At Moulton Bypass Levees, the following activity occurred:
 - 0.5 miles of vegetation cutting and limbing was completed.
- At Putah Creek, the following activities occurred:
 - 6.5 miles of road grading were completed, and
 - Rodent baiting is in progress.
- At the Sacramento Bypass Levees, the following activity occurred:
 - One gate was repaired.
- At Tisdale Bypass, the following activities occurred:
 - Vegetation spot spraying is in progress, and
 - Rodent baiting is in progress.
- At Wadsworth Canal, the following activity occurred:
 - Rodent baiting is in progress.
- At West Yolo Bypass, Units 1-3, the following activity occurred:
 - Pipe inspections were completed.
- At West Yolo Bypass, Unit 4, the following activity occurred:
 - Road grading is in progress.
- At Willow Slough Bypass, the following activity occurred:
 - Rodent baiting 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 September 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 September 2016, USACE continued construction on an 800 feet long SRBPP rock revetment erosion repair project on the left bank of the Sacramento River at river mile 16.8. This project is anticipated to be completed in November 2016.

In September 2016, construction of a setback levee on the left bank of Cache Creek at levee mile 3.4 continued. This DWR-led project will construct a new 1,000 feet long setback levee to accommodate the presently eroding bank and original levee alignment. This project is anticipated to be completed in November 2016.

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

No new information this month.