

**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.

- No new information this month.

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 May 31, statewide hydrologic conditions were as follows: precipitation, 110 percent of average to date; runoff, 100 percent of average to date; and reservoir storage, 85 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2016, observed through May 31, 2016 was about 15.7 million acre-feet (MAF), which is about 100 percent of average. In comparison to Water Year 2015, the observed Sacramento River Region unimpaired runoff through May 31, 2015 was about 8.0 MAF, or about 51 percent of average.

On May 31, the Northern Sierra 8-Station Precipitation Index Water Year total was 56.9 inches, which is about 120 percent of the seasonal average to date and 114 percent of an average water year (50.0 inches). During May, the total precipitation for the 8-Stations was 2.2 inches, or about 105 percent of average for the month. Last year on May 31, the Water Year 2015 seasonal total for the 8-Stations was 35.2 inches, or about 74 percent of average.

On May 31, the San Joaquin 5-Station Precipitation Index Water Year total was 39.7 inches, which is about 102 percent of the seasonal average to date and 97 percent of an average water year (40.8 inches). During May, the total precipitation for the 5-Stations was 1.1 inches, or

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about 61 percent of average for the month. Last year on May 31, the Water Year 2015 seasonal total for the 5-Stations was 17.4 inches, or about 45 percent of average.

On May 31, the Tulare Basin 6-Station Precipitation Index Water Year total was 25.6 inches, which is about 91 percent of the seasonal average to date and 87 percent of an average water year (29.3 inches). During May, the total precipitation for the 6-Stations was 0.4 inches, or about 36 percent of average for the month. Last year on May 31, the Water Year 2015 seasonal total for the 6-Stations was 12.1 inches, or about 43 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 05/31/2016					
Station	October 1 to Date 2015-2016	% Average	Season to Date 2014-2015	% Average	% Average Oct 1 – Sep 30
Mount Shasta	38.56	94	33.55	82	88
Eureka	43.61	113	29.86	78	108
Redding	36.05	109	22.51	68	104
South Lake Tahoe	22.04	121	11.65	64	108
Sacramento Executive Airport	16.14	90	15.37	86	87
Santa Rosa (Sonoma Co AP)	30.31	85	22.25	63	84
San Francisco	22.12	95	17.43	75	94
Stockton	16.60	121	10.58	77	118
Yosemite	35.56	99	15.64	43	94
Monterey	21.53	137	14.51	92	134
Paso Robles	7.37	59	8.21	66	58
Fresno	14.27	129	6.42	58	124
Bakersfield	5.44	87	5.29	84	84
Death Valley	1.61	85	1.05	55	68
Los Angeles	6.35	44	8.39	58	43
Riverside	5.17	43	4.83	41	42
Palm Springs	2.50	53	2.19	46	44
San Diego	7.73	77	8.73	87	75

Key Reservoir Storage (1,000 AF) as of 05/31/2016								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,392	2,114	66	2,448	57	---	1,056
Shasta Lake	Sacramento	4,167	3,901	107	4,552	92	-385	385
Lake Oroville	Feather	3,307	2,990	111	3,538	93	-231	231
New Bullards Bar Res	Yuba	901	837	108	966	93	-65	65
Folsom Lake	American	826	821	101	977	85	-151	151
New Melones Res	Stanislaus	624	1,519	41	2,400	26	-1,796	1,796
Don Pedro Res	Tuolumne	1,534	1,553	99	2,030	76	-478	496
Lake McClure	Merced	585	701	84	1,025	57	-275	440
Millerton Lake	San Joaquin	360	403	89	520	69	-160	160
Pine Flat Res	Kings	629	722	87	1,000	63	-276	371

Isabella	Kern	134	299	45	568	24	-227	434
San Luis Res	(Offstream)	677	1,617	42	2,041	33	---	1,362

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for July 2016, issued June 16, 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 (ERT). 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. The improvements include optimizing the operation of the Delta Cross Channel gates, simulating flushing flows from the San Joaquin River, and estimating channel barrier install rates and costs. Staff completed the After Action Report/ Improvement Plan for the Delta ERT tabletop exercise they held with the State Water Project Operations Control Office on June 2, 2016. The report includes corrective actions for improving coordination and operational decision-making procedures.

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 \$3.1 million has been invoiced by the grantees.

Delta Emergency Response Grants

Staff continued to manage executed contracts with local agencies. A second Proposal solicitation package is expected to be released in July 2016 for \$4.8M.

Delta Flood Emergency Facility Improvement Projects

Construction activities this month at the Rio Vista site, part of the Facility Improvement Project, included the reinforcement of a stockpile pad and the delivery and placement of rock stockpiles onto the site by truck. Facility Improvements at the South Weber Avenue parcel, located in Stockton, CA, are currently under way.

Delta Agency Coordination

Staff continues to meet monthly with Delta Stewardship Counsel in support of the Delta Levee Investment Strategy, with State Water Contractors, and with CalOES. Staff also continues to meet quarterly with USACE Emergency Response staff and with the Delta Working Group. The second quarter Delta Working Group Meeting was held on June 7, 2016, from 9:30 am to 11:30 am at Sacramento County Office of Emergency Services.

FLOOD MANAGEMENT PLANNING (FMP)

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

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING (CVFMP)

The CVFMP focuses on working with stakeholders to formulate plans for reducing flood risk and increasing the resiliency of the State Plan of Flood Control (SPFC). As recommended in the 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 Central Valley Flood Protection Plan

DWR is developing an Administrative Draft 2017 CVFPP Update, expected for Board review in August 2016. Board and DWR staff coordination meetings are being set up throughout July to discuss the Update and supporting documents.

2017 Central Valley Flood Protection Plan Supplemental Program EIR

- No new information this month.

2016 State Plan of Flood Control Descriptive Document Update

- No new information this month.

2017 Flood System Status Report Update

- No new information this month.

Basin-wide Feasibility Studies

A revised draft of the Sacramento River BWFS is expected in late summer 2016.

Basin-Wide Feasibility Study Atlases

- No new information this month.

Regional Flood Management Planning (RFMP) Phase 2

- No new information this month.

Small Communities Flood Risk Reduction Program

- No new information this month.

CONSERVATION STRATEGY

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

Conservation Strategy Document

- No new information this month.

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/.

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.

Staff participated in a meeting of workgroup 2 of the Agricultural Floodplain Ordinance Task Force on June 14, 2016. Consistent with the state's desire to see agriculture as a best-use for floodplains, several proposals were discussed being developed that would be submitted to FEMA regarding relaxation of NFIP requirements for ag-related structures.

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).

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:

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 - Final claims are being processed for reimbursement.

Subventions Program FY 2015-16 - Work Agreements due June 30, 2016.

Subventions Program FY 2016-2017 – Applications due July 1, 2016.

USACE/CVFPB PROJECTS

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

American River Common Features (ARCF) Project

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

- Site R7 construction was completed in early June 2016. A pre-final walk through was conducted on June 9, 2016, and no significant issues were identified. USACE is working with the contractor to finalize the as-built drawings for the completed sites.
- The next step is to install instrumentation (monitoring wells) along both banks of the levees to collect levee performance data. Currently, USACE and the non-federal sponsors are in the scoping phase of this task, with actual construction anticipated to occur sometime next year.

American River Watershed – Natomas Basin Project

The Natomas Basin Project was approved by President Obama in the Water Resources Reform and Development Act in June 2014. It includes significant improvements to the Natomas Basin levees resulting in a 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 provided to USACE on June 22, 2016, for Reach I Contract 2 Plans and Specifications, a Design Documentation Report (DDR), a cost estimate, and final real estate mapping.
- Comments were provided to USACE on June 28, 2016, for Reach D 60% Plans and Specifications, a DDR, and a cost estimate.

- A Project Partnership Agreement (PPA) between USACE, CVFPB, and the Sacramento Flood Control Agency (SAFCA), and a Local PPA (LPPA) between CVFPB and SAFCA was approved by the Board on June 24, 2016.

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 June 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%	92%
Phase V – Right Bank Stabilization	100%	8%
Phase V – Site Restoration	100%	0%
Project Overall	100%	94%

- ✓ Phase III: Granite Company continues finalizing closeout items on the Control Structure.
- ✓ Phase IV: Kiewit Company continues with wet-excavation work in the Approach Channel.
- ✓ Phase V - Right Bank Stabilization: Construction work started on schedule, with man anchors drilling starting June 14, 2016.
- ✓ Phase V - Site Restoration: Site Restoration activities started in the middle of June, with work scheduled to be completed by December 2016.
- ✓ A guard rail along Folsom Crossing started in early May, and was completed on June 17, 2016.

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 is expected to complete the Final Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) in October 2016, and the National Environmental Policy Act (NEPA) review in November 2016. The Board may choose to approve the Final SEIS/EIR at the December 2016 meeting, in compliance with the California Environmental Quality Act.
- USACE is currently conducting an economic re-evaluation to update costs and benefits.

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

The Lake Kaweah Enlargement Project was completed in 2006, and the remaining administrative, financial, and turnover work is planned to be complete by September 2015.

- No new information this month.

Marysville Ring Levee Improvement Project

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

- Negotiations to acquire real estate rights on Phase 2A continued with the Union Pacific Railroad, USACE, the Marysville Levee District (MLD), and the Department of Water Resources (DWR). The contract award deadline has passed for USACE this federal fiscal year, but the team is continuing to work on a resolution for an award in 2017, which would potentially prevent federal project funds from being allocated to another project.
- The Phase 2B design is underway. Design consultant, Professional Consultants of Snohomish County, presented updated alignments for the 30% design package, which is on schedule for an August 31, 2016, delivery date.

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 an area to the south and east of the city of Sacramento.

- USACE is in the process of revising the Take Map to acquire the appropriate operations and maintenance easements along the Morrison Creek alignment. The new schedule, for DWR receiving the Take Letter, is now by mid-August 2016.
- Florin Creek construction activities are on-going and currently on schedule.

USACE/CVFPB Studies

CVFPB participates with USACE to ensure that state flood management needs and mandates are met, and provides required non-federal cost share funds and technical assistance for studies to repair or upgrade the Central Valley's flood management systems. These studies identify recommended project alternatives that lead to congressionally authorized projects. These multi-benefit projects will improve flood protection for urban or urbanizing areas; reduce flood risk in rural areas that are protected by the facilities of the State Plan of Flood Control; 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)

The GRR 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.

- With the signed Chief's report, U.S. Congress is considering authorizing the project through the 2016 Water Resources Development Act.
- DWR received the amended resolution from the Board and filed the Notice of Determination with the State Clearinghouse on June 15, 2016.

Central Valley Integrated Flood Management Study (CVIFMS)

This 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.

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 most recent 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.

Lower San Joaquin River Feasibility Study (LSJRFS)

The LSJRFS will evaluate feasible flood risk reduction alternatives focused in the Stockton, Lathrop and Manteca areas, 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.

- Local agencies, including the city of Merced, Merced County, and the Merced Irrigation District are in the process of granting a recently formed Joint Powers Authority (JPA) the authority to initiate a feasibility study, and implement recommended projects to bring the city of Merced to a 200-year level of flood protection. Granting authority to the JPA was in response to concerns expressed by the Board at their May 20, 2016, meeting regarding the local agencies' lack of authority and financial capabilities when acting as study and project sponsors. Once the JPA has the appropriate authority, a Letter of Interest to USACE to initiate a study can be brought before the Board for approval and execution.

Success Reservoir Enlargement Project (SREP) GRR

The Success Reservoir is a multi-purpose facility built to provide flood control and irrigation. The Success Reservoir is currently under evaluation for flood risk; USACE and the non-Federal sponsors intend to move forward with improvements which reduce the risk of the Dam and provide the multipurpose flood control and irrigation improvements.

- No new information this month.

Sutter Basin Feasibility Study

This multipurpose study will address 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.

- 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.

West Sacramento Project GRR

The GRR will evaluate 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 and complete a Final Chief's Report.

- No new information this month.

Woodland/Lower Cache Creek Feasibility Study

This study is a state, USACE, 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. The study will continue efforts, suspended in 2004, after significant local resistance to the USACE-selected flood barrier option alternative halted the study.

- 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.

- No new information this month.

URBAN FLOOD RISK REDUCTION PROGRAM (UFRR)

*This program was created to address state investment priorities as a result of the adoption of the Central Valley Flood Protection Plan (CVFPP). UFRR supports implementation of regional flood damage reduction projects for urban and urbanizing areas protected by SPFC facilities in the Sacramento-San Joaquin Valley to achieve at least a 200-year level of flood protection. UFRR provides cost-share funding to local agencies to repair and improve levees and facilities of the SPFC. UFRR is based on competitively awarded grants and directed funding. Projects must be multi-benefit flood projects consistent with the CVFPP and State Systemwide Investment Approach. The program evolved from the **Early Implementation Program (EIP)** developed in 2007 in response to the passage of Propositions 1E and 84. The following are EIP and UFRR projects:*

Knights Landing Levee Repair Project (EIP)

This project will repair 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.

- The Flood Projects Office (FPO) accepted the city of Lathrop's Scope of Work and Financial Plan to satisfy the requirements of the final UFRR application. FPO forwarded the Funding Agreement to them for their review and comment on June 30, 2016.

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.

- RD-17 submitted their revised financial plan to FPO on May 9, 2016. Additional information was requested by DWR staff on June 6, 2016, to complete their review.

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. This project is still under review for state funding from DWR.

- No new information this month.

SAFCA – Natomas Cross Canal Project (EIP)

This Natomas Levee Improvement Program project will install 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 will install 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 plans to complete components to element 12A (RM 67) along the Sacramento River and have the USACE 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 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. FRWLP's highest priority segment is identified as Project Area C. DWR chose Project Area C for the first construction contract.

- 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 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 one of the largest setback levees west of the Mississippi River, and creates 1600 acres for on-site mitigation, agricultural use, and habitat.

- No new information this month.

TRLIA – Upper Yuba River Levee Improvement Project (EIP)

This project will result in a 200-year level of flood protection 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.

- A preconstruction meeting is scheduled for July 6, 2016, to kick off the 200-year Western Pacific Interceptor Canal improvements. This is the final construction element of project.

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

Design agreement funds 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.

- No new information this month.

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.

SYSTEMWIDE FLOOD RISK REDUCTION PROGRAM (SFRR)

The Systemwide Flood Risk Reduction Program implements large-scale flood system improvements that have cross-regional benefits and that when packaged together offer multi-benefit opportunities.

Lower Elkhorn Basin Levee Setback Project

This project will reduce flood risk by increasing the capacity of the Yolo and Sacramento Bypasses.

- FPO is working with the Central Valley Flood Protection Board (CVFPB) to complete and send a "Request to Initiate Project Review" to the United States Army Corps of Engineers (USACE). This letter will allow the USACE to commit resources to jointly review project documents pursuant to Title 33, USC section 408 (Section 408). It is anticipated that the letter will be on the CVFPB July 22, 2016, Consent Calendar.

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.

- No new information this month.

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, the 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

- Staff developed comparisons of WSE profiles for the Settling Basin between previous 1-D model and 2-D model segments for the Basin developed with HEC-RAS. Staff is updating model documentation.

Feather River Hydraulic Model

- Staff is continuing to work on model development for the Feather River.

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

- FMO completed initial runs of the model using assumed flows from the evaluation done by River Partners for the proposed Llano Seco Project and also flows used in the Butte Basin Overflow Area EIR from 1986.

Mercury Characterization Studies

- No new information this month.

Natomas East Main Drainage Canal (NEMDC)

Staff provided SAFCA's consultant (MBK) with latest model results and photo documentation reflecting existing conditions at NEMDC after completion of channel maintenance last fall.

Information is being used as part SAFCA's Corridor Management Plan development for NEMDC and its tributaries.

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 June:

- At Bear River, 3 acres of vegetation were sprayed.
- At Colusa Bypass, 5 acres of vegetation were mowed.
- At Elder Creek, 10 acres of vegetation were sprayed.
- At Tisdale Bypass, 80 cubic yards of debris were removed.

NON-ROUTINE ACTIVITIES:

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.

- No new information available for 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.

The following activities were completed in the month of June:

- No new information available for this month.

NON-ROUTINE PROJECTS:

Collecting Canal Bridge CC-2 and CC-4 Repair

- No new information available for this month.

Sacramento Maintenance Yard Paving Project

Staff completed a detailed survey of existing facilities.

Bryte Yard Groundwater Investigation

A report requesting closure under the Low-Threat Underground Storage Tank Case Closure Policy was prepared and submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB). The CVRWQCB's determination on closure eligibility is anticipated to be received during the third quarter of 2016.

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. Construction has started with the pumping plants. Work on the Willow Slough Weir, Weir 2, and KLOG will follow.

Flood Emergency Response Information Exchange (FERIX) Application for FMO

FMO is working with HAFOO and GEI Consultants to expand DFM's Flood Emergency Response Information Exchange (FERIX) application to include specific FMO references and map layers. This tool will improve informational management for FMO and allow FMO to retrieve, analyze, and store geo-referenced information. It is expected that this effort will streamline project review, permitting, design, construction, maintenance, and monitoring efforts. Available information will include past maintenance activities, environmental studies, FMO structure inspection reports, and other relevant information.

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 June:

- At Cache Creek (21.63 miles), the following activities were completed:
 - Vegetation was burned along 15 miles,
 - Trees were trimmed along 2 miles,
 - Levee slopes were dragged along 4 miles, and
 - Landside toe road maintenance occurred along 15 miles.
- At Maintenance Area (MA) 4 (3.4 miles), the following activities were completed:
 - Trees were trimmed along 1 mile, and
 - Spot spraying of vegetation occurred along 3 miles.
- At MA 9 (19.61 miles), the following activities were completed:
 - Trees were trimmed along 2 miles,
 - Spot spraying of vegetation occurred along 10.5 miles,
 - Mile markers were replaced along 3 miles, and
 - Two gates were repaired.
- At Putah Creek (16.9 miles), the following activity was completed:
 - Spot spraying of vegetation occurred along 1 mile.
- At the West Yolo Bypass levees Units 1-4 (9.35 miles), the following activities were completed:
 - Vegetation was burned along 3 miles,
 - Landside toe road maintenance along 4 miles, and
 - One gate was repaired.
- At the Willow Slough Bypass (12.82 miles), the following activities were completed:
 - Vegetation was burned along 6 miles,
 - Vegetation was spot sprayed along 1 mile,
 - Levee slopes were dragged along 3 miles, and
 - Pipe inspections were completed.
- At the East Levee of the Sacramento River (20.31 miles), the following activities were completed:
 - Vegetation was burned along 5 miles, and
 - Rodent baiting occurred along 20.31 miles.
- At the East Levee of the Sutter Bypass (22.37 miles), the following activities were completed:
 - Vegetation spot spraying along 22.37 miles, and
 - Rodent baiting occurred along 22.37 miles.
- At MA 1 (17.12 miles), the following activities were completed:
 - Vegetation was burned along 1 mile,
 - Vegetation was spot sprayed along 17.12 mile, and
 - Rodent baiting occurred along 17.12 miles.
- At MA 3 (5.19 miles), the following activities were completed:

- Vegetation was mowed along 3 miles,
 - Vegetation was burned along 2.19 mile, and
 - Rodent baiting occurred along 5.19 miles.
- At MA 5 (33.42 miles), the following activities were completed:
 - Vegetation was mowed along 33.42 miles,
 - Vegetation was burned along 33.42 mile, and
 - Waterside toe road maintenance occurred along 33.42 miles.
- At MA 13 (41.97 miles), the following activities were completed:
 - Vegetation was mowed along 41.97 miles, and
 - Waterside toe road maintenance occurred along 41.97 miles.
- At Tisdale Bypass (9 miles), the following activities were completed:
 - Vegetation was mowed along 5 miles, and
 - Rodent baiting occurred along 9 miles.
- At Wadsworth Canal (9.32 miles), the following activities were completed:
 - Vegetation was spot sprayed along 9.32 miles, and
 - Rodent baiting occurred along 9.32 miles.

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)

- No new information this month.

LEVEE 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 June 2016, FSRP has completed a total of six construction projects; one a 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 committed approximately \$38.5 million for all-weather access road improvements and levee repair projects to rural portions of the SPFC. This amount includes approximately \$4 million in local-share contributions. These committed projects are in various stages of permitting/design/construction. Projects supported with these funds include nine all-weather levee access road repair projects (64 miles total), seven critical erosion 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)

No new information this month.

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

No new information this month.