

**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.

The Flood Project Inspection Section is actively performing the Fall Inspection.

REAL-TIME FLOOD CONDITIONS, STATUS, & WARNING

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

Staff continued working on the Real-Time Inundation Modeling project. The project includes the development of hydraulic models and interface tools to predict flood inundation timing and extents in near real-time for the Sacramento and San Joaquin systems. Model development for the Sacramento system is nearly complete. Next, the models will be thoroughly tested, optimized for runtime efficiency, and integrated with the graphical user interface.

Staff continued working on the Feather River Conveyance Reevaluation project. The project will reevaluate the Feather River conveyance capacity downstream of Oroville Dam. Staff is updating models based on bathymetry and LiDAR data collected in 2017. Next, staff will calibrate the model, evaluate the channel capacity, and document findings in a report.

Staff is making updates to the FERIX website for use during the upcoming flood season. Completed updates include all the serious and critical damaged sites in the Levee Vulnerabilities web-application. Future updates include uploading Levee Safety Plans and Contingency Plans.

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, 2017, the end of Water Year 2017, statewide hydrologic conditions were as

follows: precipitation, 165 percent of average to date; runoff, 215 percent of average to date; and reservoir storage, 120 percent of average to date.

Sacramento River Region unimpaired runoff, for Water Year 2017, observed through September 30, 2017 was about 37.9 million acre-feet (MAF), which is about 212 percent of average. In comparison to Water Year 2016, the observed Sacramento River Region unimpaired runoff through September 30, 2016 was about 17.5 MAF, or about 98 percent of average. San Joaquin River Region unimpaired runoff, for Water Year 2017, observed through September 30, 2017 was about 18.0 MAF, which is about 258 percent of average. In comparison to Water Year 2016, the observed San Joaquin River Region unimpaired runoff through September 30, 2016 was about 6.1 MAF, or about 87 percent of average. Tulare Lake Region unimpaired runoff, for Water Year 2017, observed through September 30, 2017 was about 7.3 MAF, which is about 238 percent of average. In comparison to Water Year 2016, the observed Tulare Lake Region unimpaired runoff through September 30, 2016 was about 2.0 MAF, or about 65 percent of average.

On September 30, 2017, the Northern Sierra 8-Station Precipitation Index Water Year total was 94.7 inches, which is about 189 percent of the seasonal average to date and 189 percent of an average water year (50.0 inches). During September, the total precipitation for the 8-Stations was 0.4 inches, or about 44 percent of average for the month. Last year on September 30, 2016, the Water Year 2016 seasonal total for the 8-Stations was 57.9 inches, or about 116 percent of average.

On September 30, 2017, the San Joaquin 5-Station Precipitation Index Water Year total was 72.7 inches, which is about 178 percent of the seasonal average to date and 178 percent of an average water year (40.7 inches). During September, the total precipitation for the 5-Stations was 0.9 inches, or about 128 percent of average for the month. Last year on September 30, 2016, the Water Year 2016 seasonal total for the 5-Stations was 40.0 inches, or about 98 percent of average.

On September 30, 2017, the Tulare Basin 6-Station Precipitation Index Water Year total was 46.9 inches, which is about 160 percent of the seasonal average to date and 160 percent of an average water year (29.2 inches). During September, the total precipitation for the 6-Stations was 0.5 inches, or about 83 percent of average for the month. Last year on September 30, 2016, the Water Year 2016 seasonal total for the 6-Stations was 25.8 inches, or about 88 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 09/30/2017 (minor differences are due to rounding)					
Station	Water Year 2017 to Sep 30 2017	% Average	Water Year 2016 to Sep 30, 2016	% Average	WY 2017 % of Avg Water Year (Oct 1 – Sep 30)
Mount Shasta	59.77	137	40.97	94	137
Eureka	52.45	130	44.02	109	130
Redding	46.25	134	37.30	108	134
South Lake Tahoe	48.37	238	22.22	109	237
Sacramento Executive Airport	32.97	178	16.14	87	178

Santa Rosa (Sonoma Co AP)	58.24	161	30.43	84	161
San Francisco	32.17	136	22.16	94	136
Stockton	21.63	154	16.60	118	154
Yosemite	75.64	200	36.10	95	199
Monterey	24.23	150	21.54	134	150
Paso Robles	14.22	111	7.37	58	111
Fresno	17.40	151	14.33	125	151
Bakersfield	8.32	129	5.44	84	129
Death Valley	1.60	68	1.68	71	68
Los Angeles	17.76	119	6.35	43	119
Riverside	12.25	99	5.17	42	99
Palm Springs	8.95	156	3.41	59	156
San Diego	12.34	119	8.05	78	119

Key Reservoir Storage (1,000 AF) as of 09/30/2017								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,791	1,666	107	2,448	73	---	657
Shasta Lake	Sacramento	3,382	2,725	124	4,552	74	-1,170	1,170
Lake Oroville	Feather	1,332	2,188	61	3,538	38	-2,019	2,206
New Bullards Bar Res	Yuba	691	593	117	966	72	-219	275
Folsom Lake	American	664	554	120	977	68	-313	313
New Melones Res	Stanislaus	2,024	1,343	151	2,400	84	-249	396
Don Pedro Res	Tuolumne	1,699	1,371	124	2,030	84	-73	331
Lake McClure	Merced	768	464	166	1,025	75	-85	257
Millerton Lake	San Joaquin	365	210	173	520	70	-156	155
Pine Flat Res	Kings	591	338	175	1,000	59	-409	409
Isabella	Kern	212	187	113	568	37	-92	356
San Luis Res	(Offstream)	1,752	955	183	2,041	86	---	287

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for November 2017, issued October 19, 2017, 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.

- No new information this month.

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 which developed California's Flood Future: Recommendations for managing the state's flood risk (California's Flood Future) and the Central Valley Flood Management Planning Program, and which developed the 2012 Central Valley Flood Protection Plan (CVFPP) and 2017 CVFPP Update.

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING

*Statewide Integrated Flood Management Planning (SIFMP) has identified flood risks facing Californians and proposed mitigation measures to manage the risks. SIFMP presented recommendations to improve flood management in a comprehensive report titled **California's Flood Future: Recommendations for Managing the State's Flood Risk**. The report identified that more than 7 million Californians, or one in five, live within a 500-year level of flood risk floodplain, and approximately \$580 billion in assets (crops, structures, and public infrastructure) are exposed to flooding. It was produced working jointly with USACE and more than 140 public agencies and presented comprehensive information about exposure to flood risk in each of California's counties, and about specific projects and associated costs that local agencies are planning to implement to reduce flood risks to their communities. Information developed for "California's Flood Future" was used to create flood management content and recommended flood related risk reduction management actions presented in the "California Water Plan Update", published in October 2013.*

- No new information this month.

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING (CVFMP)

The CVFMP focuses on working with stakeholders to formulate plans for reducing flood risk and increasing the resiliency of the State Plan of Flood Control (SPFC). In August 2017, the Board adopted the first five-year update, as required by the California Water Code (CWC).

2022 Update to 2012 Central Valley Flood Protection Plan

- The 2017 CVFPP Update prepared by DWR is complete.
- DWR and Board staff are coordinating on developing the scope of the 2022 Update to the 2012 CVFPP.
- Work is ongoing on development of a CVFPP performance tracking framework.

- DWR staff participated in the Board Workshop on October 13.

Supplemental Program EIR for 2022 Update to 2012 Central Valley Flood Protection Plan

- On August 4, 2017, DWR certified the Final Supplemental Program Environmental Impact Report on the 2017 CVFPP Update.

Technical Services:

- No new information this month.

Public Engagement

Flood Planning Office (FPO) 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/.

- 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 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.

- The 2016 Conservation Strategy is complete.

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.

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 09, 2017 - Staff conducted a Community Assistance Visit (CAV) for the City of Clayton, CA.
- October 11, 2017 - Staff conducted a CAV meeting with Clayton city officials.
- October 17, 2017 - Staff conducted a FEMA workshop, Floodplain Management and Duties of the Local Administrator in Santa Barbara, CA.

FLOOD RISK REDUCTION PROJECTS (FRRP)

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

DELTA LEEVE 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 – Sixty-one final claims for \$7.9 million have been processed for reimbursement. One unresolved claim requires CDFW approval before payment can be made.
- Subventions Program FY 2015-16 – Sixty-five final claims were received and are being reviewed. Of these, 60 final claims for \$8.3 million are being processed for reimbursement.
- Subventions Program FY 2016-2017 – The CVFPB approved \$12M for the FY 2016-2017 Funding Plan on August 26, 2016. CVFPB has executed 58 work agreements. Final claims were due November 1, 2017.
- Subventions Program FY 2017-18 – Seventy-two applications were received and reviewed. The CVFPB approved \$12M for the FY 2017-2018 Funding Plan on June 23, 2017.

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 Watershed Project - Common Features (WRDA 96/99 Sites)

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

- No new information this month.

American River Watershed Project – Natomas Basin

The Natomas Basin Project was authorized in the 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.

- No new information this month.

American River Watershed Project – WRDA 2016

This project consists of the design and construction of levee improvement measures to address seepage, stability, erosion and overtopping concerns identified for the Sacramento River, Natomas East Main Drainage Canal (NEMDC), Arcade Creek, and Magpie Creek as well as erosion measures for specific locations along the American river, as well as to widen the Sacramento Weir and Bypass.

- No new information this month.

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 status as of October 25, 2017, is as follows:

- The Project Completion Ceremony was successfully held on October 17, 2017.
- The United States Bureau of Reclamation (Reclamation) & USACE have signed a Memorandum of Agreement (MOA) and have scheduled to transfer ownership of the JFP site on February 28, 2018.
- USACE has begun building an access ramp for maintenance access to the Stilling Basin.
- The USBR has begun construction for the right bank stabilization element of the JFP.

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.

- The Project Partners requested a review of the initial project Economic Analysis. The USACE has stated they have begun work on this issue.
- The Project Partnership Agreement (PPA) draft language has been written and is currently under USACE legal review.
- The current (draft) schedule, while still being revised, shows construction activities to begin in 2020. USACE has begun informational meetings with Project Partners to discuss project Dam Safety issues.
- USACE has completed the Final Supplemental Environmental Impact Statement / Environmental Impact Report. It is anticipated that DWR Staff will present the report to the Board for approval in the first half of 2018.

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

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

- No new information this month.

Marysville Ring Levee Improvement Project

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

- No new information this month.

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.

- No new information this month.

Sutter Basin Preconstruction Engineering and Design (PED)

The Preconstruction Engineering and Design (PED) phase is for the design of the remaining portions of the federal project, authorized in the Water Resources Reform and Development Act of 2014 and modified in the Water Resources Development Act of 2016 that have not been already implemented by the Sutter Butte Flood Control Agency (SBFCA) and DWR through DWR's Early Implementation and Urban Flood Risk Reduction Programs.

- No new information this month.

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:

Cache Creek Settling Basin Project GRR

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

- No new information this month.

Central Valley Integrated Flood Management Study (CVIFMS)

This Watershed Study identifies federal interest in the Sacramento River Basin by identifying opportunities to reduce flood risk and protect floodplain and environmental assets. The CVIFMS Watershed Plan, the final report of the study, will serve as a Federal companion document to the state's Central Valley Flood Protection Plan once approved by the Assistant Secretary of the Army for Civil Works.

- 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 recreation. USACE and the non-Federal sponsors intend to move forward with improvements which are intended to provide improved flood risk reduction, water supply, and recreation improvements. The enlargement project will add additional storage for water supply, increased flood protection, and improve dam safety.

- 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 Cutback 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 (LAP)

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.

- No new information for this month.

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 for 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 for this month.

San Joaquin Area Flood Control Agency (SJAFCA) – 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.

- The UFRR Funding Agreement between DWR and the San Joaquin Area Flood Control Agency (SJAFCA) was executed by the Department of General Services on October 24, 2017. The agreement amount is \$22,309,666 for the engineering and construction of the Smith Canal Gate Project with an expiration date of June 30, 2021.

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 for 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.

- The TRLIA Goldfields Funding Agreement was executed by the Department of General Services

on October 4, 2017. The contract allocation is \$32,600,000, at an 85 percent State, 15 percent TRLIA cost share. The term on the contract is September 8, 2017 to June 30, 2022. The Agreement scope includes design and construction of an extension of the Yuba River Levee to meet high ground, completing the project levee in this segment.

TRLIA – Feather River Levee Improvement Project (EIP)

This project resulted in a 200-year flood protection from the Yuba River for Highway 65 and 70, and also improved flood protection from the Feather River 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.

- No new information this month.

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 of 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.

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.

- No new information this month

SYSTEMWIDE FLOOD RISK REDUCTION PROGRAM (SFRR)

Consistent with the Central Valley Flood Protection Plan, SFRR works 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 floodplain will result from the construction of the levee setback that may benefit ecosystem function in the future.

- No new information this month.

Other Systemwide Projects

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

FLOOD CORRIDOR PROGRAM (FCP)

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

- No new information this month.

LOCAL LEVEE ASSISTANCE PROGRAM (LLAP)

The LLAP was created to help fund projects implemented by flood management agencies, mainly outside of the Sacramento-San Joaquin Delta and excludes State Plan of Flood Control facilities. 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 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, 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.

Chico Area Streams Project

- 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 is preparing the 2nd Report of Findings summarizing the mercury characterization studies performed for the Basin. The Report, to be submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB), will provide updates to the sediment and mercury loads and trap efficiency estimates provided to the CVRWQCB in 2015, as well as updates on the status of local and regional flood improvement projects potentially impacting improvements to and the long-term use of the Basin.

Middle Creek Project (MCP)

- No new information this month.

Natomas East Main Drainage Canal (NEMDC)

- No new information this month.

ROUTINE OPERATIONS AND MAINTENANCE

The Maintenance Yards' routine channel maintenance is limited to vegetation management through such methods as spraying, mowing, and trimming. These activities are planned at the end of flood season and are completed before the next flood season. Although DWR manages large areas in channels, only a small percentage is actively maintained by DWR. Reporting on planned activities in actively maintained areas started on November 1, 2016, and will end on October 31, 2017. 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.

In the month of October:

- At Fremont Weir, vegetation mowing is in progress.
- At Schreiner's and Furlon Properties, 60 acres of vegetation mowing was completed.
- At Yankee Slough, 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:

- Staff performed structural inspections for all structures under DWR Flood Maintenance Office O&M responsibility. Engineers' recommendations were presented to the Maintenance Yards. Pipe inspections for gravity drains that penetrate levees are underway. Approximately 40 pipes in DWR maintained areas have been video inspected.

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.

For the month of October:

- At Knights Landing Outfall Gates, structural repair was completed.
- At Little Chico and Butte Creek Diversion Weirs, 1.0 acre of vegetation spot spraying was completed.

NON-ROUTINE PROJECTS:

Bryte Yard Groundwater Investigation

- The formal "No Further Action Required" letter was received from the Central Valley Regional Water Quality Control Board on August 1, 2017. This project is officially closed.

Butte Slough Outfall Gates (BSOG)

- No new information this month.

Collecting Canal Bridge CC-2 and CC-4 Repair

- No new information for this month.

Knights Landing Outfall Gates Fish Barrier

- No new information this month.

Sacramento Maintenance Yard (SMY) Paving Project

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

were measured and recorded.

West Borrow Canal Bridge WL-1 Evaluation

- Real Estate reported that the land (including the bridge) was sold to a private farming operation by CDFW in recent months. Real Estate has been tasked with documenting the transaction to assure DWR has no remaining liability.

LEVEE 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, 2016, and ends on October 31, 2017. 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:
 - 20 miles of rodent grouting was completed, and
 - 12 miles of road grading was completed.
- At MA 1, the following activity occurred:
 - Rodent baiting is in progress.
- At MA 3, the following activity occurred:
 - Rodent baiting is in progress.
- At MA 9, the following activity occurred:

- Rodent baiting is in progress.
- At MA 12, the following activity occurred:
 - Rodent baiting is in progress.
- At Wadsworth Canal, 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)

This is a maintenance program to obtain all permits necessary to repair small levee erosion along DWR-maintained waterside areas. Up to 15 sites can be repaired annually. SERP permits are active as of May 2014 and expire May 2019.

- Levee erosion was identified in MA 9 in May 2017. The site fits the criteria to be repaired under the SERP program. All permit authorizations for the site were obtained on October 16, 2017. Yard staff determined that cutting into the levee at this point, near flood season, was too uncertain. The plan will be to construct the site next season. Contingency plans are in place to flood fight this location during flood season if needed.

Deferred Maintenance Project (DMP)

- DFM has developed the DMP to evaluate and repair levee penetrations, help implement systemwide 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.

Staff met with LMAs to deliver Notice of Eligibility (NOE) documents for the video inspection portion of the project and explained the required paperwork and general project process. Staff expects to complete NOE meetings at the end of July.

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)

FSRP has completed a total of 9 construction projects consisting of one proactive erosion repair in State Maintained Area ST008, and 8 all-weather access patrol road repairs in RD 1500, RD 1600, RD 2063, RD 2085, RD 1001, RD 2102/RD 817, RD 10, and the Lower San Joaquin Levee District (109 miles total). The total project costs for these repairs included a paid state-share of approximately \$5.97 million and paid local-share of approximately \$824,000. Currently, FSRP has executed Project Agreements with 17 LMAs, committing approximately \$35.9 million for all-weather access patrol roads and critical levee repair projects in rural portions of the SPFC. These commitments include approximately \$4.8 million in local-share contributions. These projects are in various stages of permitting, design, and construction and include 7 all-weather access patrol road repairs (45 miles total), 11 critical erosion/seepage/stability repair projects (total length of 27,000 linear feet), and 1 control structure repair project. Staff is currently developing Project Agreements to commit additional funds with 111 LMAs for various types of rural levee repair projects within the SPFC.

Sacramento River Bank Protection Project (SRBPP)

The USACE has awarded a contract to construct a SRBPP rock revetment erosion repair project on the Sacramento River at river mile 71.3R (Yolo County). Currently they are reviewing contractor submittals and will be issuing a Notice to Begin Work in September. USACE and DWR/CVFPB staff is working closely with Reclamation District 1600 to ensure that all the District's concerns are addressed prior to the commencement of construction. The preliminary schedule has this work being completed by the end of November 2017.

2017 Storm Damage DWR Emergency Rehabilitation (SDDER) Program

SDDER has assessed over 300 reported damage sites on the Sacramento River and San Joaquin River State Plan of Flood Control (SPFC) levee systems. DWR has 29 sites under construction and plans to complete construction before November 30. Construction at 18 sites is essentially complete. DWR is funding the Sutter Butte Flood Control Agency (SBFCA) to construct one site in Yuba City.

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

As a result of the storm events of January, February, and March 2017, federal and state agencies have responded to numerous emergency erosion and seepage locations throughout the Sacramento and San Joaquin River systems. Coordination efforts have been initiated between the USACE, DWR, and the Board. DWR and the CVFPB have submitted a list of flood damaged sites to

the USACE for PL 84-99 repair consideration. The USACE is planning to repair 16 sites before the 2017-18 flood season and has broken the 16 sites into three contracts. Construction is ongoing and two sites have been completed under the three USACE contracts. Additional USACE PL 84-99 construction is planned for the spring of 2018. Up to an additional 40 sites may be repaired.

Environmental Permitting for Operations and Maintenance Project (EPOM)

- A Draft Environmental Impact Report (DEIR), prepared pursuant to the California Environmental Quality Act (CEQA), was sent out for public review on January 18, 2017. The proposed project would support a streamlined approach to permitting of Department of Water Resources mandated operation and maintenance (O&M) activities associated with maintaining the proper function of the Sacramento River Flood Control Project (SRFCP) and Middle Creek Project flood protection facilities, including but not limited to: levee maintenance, channel maintenance, flood control structure maintenance and repair, and data collection. The proposed project would allow the continuation of these maintenance activities within the regulatory limitations imposed by required permits. The SRFCP levees, channels, and structures are located along the Sacramento River and its tributaries between Red Bluff and the area just south of Rio Vista. The Middle Creek Project is located near Clear Lake in Lake County. The review period for the DEIR began January 18, 2017, and ended March 3, 2017, at 5:00 p.m. DWR staff continues to review and prepare responses to comments received on the DEIR.

Based on comments received on the Cultural Resources Section of the DEIR for EPOM, a revised chapter was recirculated for public comment on September 19, 2017. The public comment period for the revised Cultural Resources Chapter is 45 days and ended on November 3, 2017.

- On September 13, 2017, staff met with CDFW staff from Regions 2 and 3 to continue discussions on the development of Section 1600 Lake or Streambed Alteration Agreements that authorizes required maintenance on portions of the Sacramento River Flood Control Project that DWR is responsible for maintaining.