

**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.*

### **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 January 31, 2018, statewide hydrologic conditions were as follows: precipitation, 60 percent of average to date; runoff, 55 percent of average to date; and reservoir storage, 105 percent of average to date.

Sacramento River Region unimpaired runoff, for Water Year 2018, observed through January 31, 2018 was about 3.4 million acre-feet (MAF), which is about 62 percent of average. In comparison to Water Year 2017, the observed Sacramento River Region unimpaired runoff through January 31, 2017 was about 11.9 MAF, or about 218 percent of average. San Joaquin River Region unimpaired runoff, for Water Year 2018, observed through January 31, 2018 was about 0.7 MAF, which is about 67 percent of average. In comparison to Water Year 2017, the observed San Joaquin River Region unimpaired runoff through January 31, 2017 was about 3.8 MAF, or about 342 percent of average. Tulare Lake Region unimpaired runoff, for Water Year 2018, observed through January 31, 2018 was about 0.3 MAF, which is about 63 percent of average. In comparison to Water Year 2017, the observed Tulare Lake Region unimpaired runoff through January 31, 2017 was about 0.9 MAF, or about 230 percent of average.

On January 31, 2018, the Northern Sierra 8-Station Precipitation Index Water Year total was 19.6

inches, which is about 70 percent of the seasonal average to date and 37 percent of an average water year (51.8 inches). During January, the total precipitation for the 8-Stations was 7.0 inches, or about 78 percent of average for the month. Last year on January 31, 2017, the Water Year 2017 seasonal total for the 8-Stations was 53.2 inches, or about 191 percent of average.

On January 31, 2018, the San Joaquin 5-Station Precipitation Index Water Year total was 9.2 inches, which is about 44 percent of the seasonal average to date and 22 percent of an average water year (40.2 inches). During January, the total precipitation for the 5-Stations was 4.2 inches, or about 58 percent of average for the month. Last year on January 31, 2017, the Water Year 2017 seasonal total for the 5-Stations was 42.9 inches, or about 208 percent of average.

On January 31, 2018, the Tulare Basin 6-Station Precipitation Index Water Year total was 4.5 inches, which is about 31 percent of the seasonal average to date and 15 percent of an average water year (28.8 inches). During January, the total precipitation for the 6-Stations was 2.5 inches, or about 46 percent of average for the month. Last year on January 31, 2017, the Water Year 2017 seasonal total for the 6-Stations was 30.2 inches, or about 209 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 01/31/2017					
Station	Water Year 2018 to 01/31/2017	% Average	Water Year 2017 to 01/31/2016	% Average	WY 2018 % of Avg WY (Oct 1 – Sep 30)
Mount Shasta	9.69	43	33.14	148	22
Eureka	18.60	83	30.15	134	46
Redding	10.51	56	29.02	154	30
South Lake Tahoe	8.19	77	27.01	254	40
Sacramento Executive Airport	7.09	71	19.34	195	38
Santa Rosa (Sonoma Co AP)	12.43	60	35.18	169	34
San Francisco	8.50	64	18.15	136	36
Stockton	3.99	53	12.34	165	28
Yosemite	8.40	44	45.06	234	22
Monterey	5.23	63	14.05	169	32
Paso Robles	2.31	36	8.85	138	18
Fresno	1.64	29	10.06	178	14
Bakersfield	1.10	35	5.77	185	17
Death Valley	0.47	50	0.46	49	20
Los Angeles	1.86	26	13.20	185	12
Riverside	1.58	27	9.42	164	13
Palm Springs	1.45	51	5.31	186	25
San Diego	1.87	37	7.87	155	18



Key Reservoir Storage (1,000) AF as of 01/31/2017								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,776	1,730	103	2,448	73	---	672
Shasta Lake	Sacramento	3,349	3,072	109	4,552	74	-492	1,203
Lake Oroville	Feather	1,408	2,317	61	3,538	40	-1,671	2,130
New Bullards Bar Res	Yuba	759	584	130	966	79	-37	207
Folsom Lake	American	582	508	115	977	60	5	395
New Melones Res	Stanislaus	1,981	1,423	139	2,400	83	11	439
Don Pedro Res	Tuolumne	1,666	1,391	120	2,030	82	-24	364
Lake McClure	Merced	675	489	138	1,025	66	0	350
Millerton Lake	San Joaquin	372	333	112	520	71	-64	148
Pine Flat Res	Kings	518	470	110	1,000	52	-222	482
Isabella	Kern	166	173	96	568	29	-4	402
San Luis Res	(Offstream)	1,736	1,607	108	2,041	85	---	303

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for March 2018, issued February 15, 2018, suggests average precipitation for Northern California and the length of the Sierra. In the remainder of the state, below-average precipitation is suggested.

**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) is working on identifying flood risks facing Californians statewide and determining state investment levels required to achieve the intended outcomes necessary to progress the state's flood management system towards sustainability. In 2013, the SIFMP presented recommendations to improve flood management in a comprehensive report titled **California's Flood Future: Recommendations for Managing the State's Flood Risk** (Flood Future Report). The report 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. Currently, the SIFMP is developing a document titled **Investing in California's Flood Future: An Outcome Driven Approach to Flood Management**, which builds on the information from the Flood Future Report. The SIFMP is also assisting in the development of the 2018 Update of the California Water Plan (CWP).*

#### **Investing in California's Flood Future: An Outcome Driven Approach to Flood Management**

- SIFMP staff is working on developing the report, highlights, and accompanying technical attachments, which is anticipated to be released in March 2018.

#### **California Water Plan, Update 2018**

- SIFMP staff is assisting California Water Plan (CWP) staff in developing the Funding Plan (Chapter 4) and the Policy Recommendations for the CWP, with the Public Review Draft coming out at the end of February.

#### **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.

### **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.

### **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.*

- The dates for 2018 California Flood Preparedness Week is October 20 - 26. This is a CA Silver Jackets activity led by DWR. Initial planning started in March.

### **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 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 – No new information this month.
- Subventions Program FY 2015-16 – No new information this month.
- Subventions Program FY 2016-2017 – No new information this month.
- Subventions Program FY 2017-18 – No new information this month.

### **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 for 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.*

Post Construction status as of March 6, 2018, is as follows:

- USACE has completed wet commissioning of the control structure, and additional commissioning on items such as the emergency generators is planned to continue through March 2018.

### **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 bidding Pre-Engineering Design (PED) of dikes #1-6, bids are due March 9, 2018.
- USBR, DWR, SAFCA and USACE have scheduled a meeting to obtain concurrence on the Left Wing Dam, Right Wing Dam, MIAD and Gate Modifications design concepts.
- DWR is scheduled to provide an informational presentation for the project's CEQA documentation at the March 27, 2018, CVFPB meeting.
- USACE and the Non-Federal Partners have begun review of a model PPA for the project.
- USACE shared a Draft Economic analysis for the Dam Raise Project.

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

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

- No new information this month

### **Marysville Ring Levee Improvement Project**

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

- The Supplemental Environmental Assessment/Initial Study for Phases 2A South and 2C of the project was made available for public comment February 16, 2018 through March 22, 2018. A public meeting was held in Marysville on February 28, 2018.

### **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.*

- The state and Agency review period letters and proposed Chief of Engineers' Report were

mailed February 2, 2018. The Notice of Availability of the San Joaquin River Basin Lower San Joaquin River, CA, Final Integrated Interim Feasibility Report/Environmental Impact Statement/Environmental Impact Report was published in the Federal Register on February 9, 2018. The review period ended on March 12, 2018.

#### **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.*

- At the February Board meeting, USACE recommended that the GRR be placed on an inactive status.

#### **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.*

- No new information for this month.

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

*FRWLP repairs approximately 35 miles of levees along the west bank of the Feather River from the Thermalito Afterbay to the north end of Star Bend. This project includes construction of slurry walls and seepage berms to protect Gridley, Biggs, Live Oak, Yuba City, and parts of Sutter and Butte counties.*

- No new information 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.*

- No new information for this month

**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.*

- Thirteen funding agreements have been executed to date, and six funding agreements are with San Joaquin County grantees for signature. The thirteen executed agreements are with Sacramento County (Courtland, Hood, Locke, Walnut Grove East, Walnut Grove West/Ryde), Yolo County (Yolo, Knights Landing, Clarksburg), Colusa County (Colusa, Grimes, Princeton), the City of Rio Vista and the City of Isleton.

### **SYSTEMWIDE FLOOD RISK REDUCTION PROGRAM (SFRR)**

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

### **Lower Elkhorn Basin Levee Setback (LEBLS) Project**

*This project will reduce flood risk by increasing the capacity of the Yolo and Sacramento Bypasses, and lowering flood stages in the Sacramento River. New areas of inundated 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 LEEVE 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.

### **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.

#### **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.

#### **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 has been 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:**

### **2017 Storms – Channel Evaluations**

- During the 2017 Storms, flood conveyance channels experienced significant hydraulic flows, sediment transport, and deposition. Post event channel evaluations (including LiDAR and bathymetric data collection) are being conducted for the Feather River, Tisdale Bypass, Colusa Bypass, and Sacramento Bypass to determine if a channel rehabilitation project is required to restore flood conveyance capacity.

### **Chico Area Streams Project**

- Flood Maintenance Office (FMO) initiated project planning to address hydraulic deficiencies within Big Chico Creek, Lindo Creek and Sycamore Creek diversion channels. Sutter Yard has already started removing debris from Big Chico Creek.

### **Feather River Hydraulic Model**

- Nothing significant to report.

### **Mercury Characterization Studies**

- Contents of the final trap efficiency modelling report are due to FMO in April 2018.

### **Middle Creek Project (MCP)**

- Nothing significant to report.

## **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, 2017, and will end on October 31, 2018. 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 February 2018:

- At Big Chico Creek, 60 cubic yards of debris was removed.
- At Elder Creek, 1.75 miles of vegetation masticating was completed and 70 cubic yards of road gravel was placed on toe roads.
- At Little Chico Creek, 10 cubic yards of debris was removed.

#### **NON-ROUTINE ACTIVITIES:**

##### **Elder Creek Channel Rehabilitation Project**

- Transplanting of 16 elderberry shrubs was completed in January 2018. Project work is anticipated to resume in June 2018 when the channel dries up.

#### **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 February 2018:

- Nothing significant to report.

#### **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 February 2018:

- Due to expired Routine Maintenance Agreement with Department of Fish and Wildlife (CDFW), the Yards are not able to complete any routine maintenance activities. FMO continues to work with CDFW to secure a new permit for all such activities.

#### **NON-ROUTINE PROJECTS:**

##### **Butte Slough Outfall Gates (BSOG)**

- Environmental permits that were obtained and placed on hold in 2014/2015 for BSOG rehabilitation (construction work) are being reviewed to determine if amendments and/or new permits can be obtained to cover long-term operations and maintenance activities.

##### **Collecting Canal Bridge CC-2 and CC-4 Repair and Replacement**

- The final permit, the California Endangered Species Act Consistency Determination, was signed on February 2, 2018. DWR received a copy of the document on February 16, 2018. However, DWR is not able to complete the bridge replacement until next year due to timing on the bridge manufacturing process.
- Staff are designing a geotechnical boring program for CC-4 and obtaining bids from pre-cast concrete vendors for the CC-2 bridge components.

##### **Knights Landing Outfall Gates Fish Barrier**

- Nothing significant to report.

##### **Old Sutter Pumping Plant Rehabilitation**

- FMO is initiating a project to remove the old, unused pumping plant buildings in Sutter County and provide access and safety for staff to operate the gravity drain culverts that remain in place.

##### **Sacramento Maintenance Yard (SMY) Paving Project**

- FMO continues to work with DOE to develop a project to rehabilitate underground utilities and restore the parking area. The drainage and grading plan is at 60 percent, but information regarding electrical conduits needs is still several months out and must be complete before drainage and pavement plans are finalized.

##### **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.

## **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, 2016, and ended 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 February 2018:

- At MA 5, the following activities occurred:
  - 33.42 miles of vegetation broadcast spraying was completed, and
  - Debris removal is in progress.
- At MA 9, the following activity occurred:
  - Vegetation cutting and limbing is in progress.
- At MA 13, the following activity occurred: -
  - Encroachment removal was completed.
- At Putah Creek, the following activities occurred:
  - Rodent baiting is in progress, and
  - Mile marker sign replacement is in progress.
- At the West Yolo Bypass Units 1-4, the following activity occurred:
  - Vegetation spot spraying is in progress.
- At the Willow Slough Bypass, the following activity occurred:



- Vegetation spot spraying is in progress.

- **NON-ROUTINE PROJECTS**

- Nothing significant to report.

### **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.*

### **Small Erosion Repair Program (SERP)**

This is a maintenance program to obtain all permits necessary to repair small reaches of 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.

- DFM Acting Chief presented an informational briefing to the CVFPB meeting on February 23, 2018. Coordination meetings were conducted with the Maintenance Yards on construction of the 12 sites planned for this year. For the Sacramento River site, soil was collected on February 27, 2018 at the erosion site and a soil pile at the staging area was to be tested for contaminants. FMO continues to make progress on purchasing 8.37 acres of credit to mitigate for potential incidental take of the Giant Garter Snake during construction.

### **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 continues meeting with LMAs to deliver Notice of Eligibility (NOE) documents for the video inspection portion of the project.

As of the month of February 2018:

- There are 27 DWR directed funding agreements for Phase 1 video inspections that have been executed with Local Maintaining Agencies (LMAs). There are 11 contracts in place and LMAs are starting the inspections. There are 16 contracts under finalization process.
- There are five DWR directed funding agreements in process with LMAs.
- One DWR directed funding agreement is currently in process for Phase 2 repair of a failed pipe in RD 784. RD 784 has provided a signed assurance agreement to the CVFPB for long term operations and maintenance (O&M) of the pipe to be replaced.

- DWR has video inspected 82 of 333 pipes passing through levees in areas of DWR “O&M” responsibility.

### **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)**

Progress on FSRP work has been delayed due to the USACE and DWR rehabilitation repairs to the SPFC from the 2017 high water events. As these repairs are concluded, FSRP will continue to work with rural LMAs to enter into project agreements, to the extent existing (and future) funding allows.

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

- Nothing significant to report.

### **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 completed all major work at the 29 DWR sites. Remaining work at some sites includes hydro-seeding and pole plantings. DWR is funding the Sutter Butte Flood Control Agency (SBFCA) to construct one site in Yuba City, which is completed. There are nine remaining critical repair sites, with plans and specifications completed, scheduled for construction this summer; environmental permits are anticipated to be in place by May 2018. These nine sites represent the final critical sites identified for state rehabilitation. DWR is continuing the prioritization and repair process for previously identified serious sites.

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

USACE has completed construction on 15 of the 2017 PL 84-99 repair sites. Additional USACE PL 84-99 construction is planned for the early summer of 2018 and beyond, as USACE has identified an additional 35 sites eligible for PL 84-99 rehabilitation.

### **Environmental Permitting for Operations and Maintenance Project (EPOM)**

On January 19 and 24, 2018, CDFW’s Regions 2 and 3 provided section 1602 draft Lake and Streambed Alteration Agreements (RMAs) to FMO staff. The draft RMAs will authorize maintenance yard staff to conduct its mandated maintenance responsibilities on the SRFCP once the RMAs are executed between FMO and CDFW. The draft RMAs have been reviewed by FMO

management and staff, maintenance yard staff, and Legal Office staff to determine whether the conditions and provisions in the RMAs are feasible and can be complied with. The draft RMAs were submitted on February 28 to CDFW Regions 2 and 3 staff with FMO's comments and proposed edits to the draft RMAs. FMO staff will be meeting with CDFW staff on March 7 to discuss the comments and proposed edits.

**OTHER ACTIVITIES:**

**Emergency Response Support**

Nothing significant to report.

