

**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 April 30, 2018, statewide hydrologic conditions were as follows: precipitation, 75 percent of average to date; snow water content, 25 percent of average to date; runoff, 75 percent of average to date; and reservoir storage, 110 percent of average to date.

Sacramento River Region unimpaired runoff, for Water Year 2018, observed through April 30, 2018 was about 9.8 million acre-feet (MAF), which is about 75 percent of average. In comparison to Water Year 2017, the observed Sacramento River Region unimpaired runoff through April 30, 2017 was about 31.1 MAF, or about 238 percent of average. San Joaquin River Region unimpaired runoff, for Water Year 2018, observed through April 30, 2018 was about 3.8 MAF, which is about 109 percent of average. In comparison to Water Year 2017, the observed San Joaquin River Region unimpaired runoff through April 30, 2017 was about 10.7 MAF, or about 307 percent of average. Tulare Lake Region unimpaired runoff, for Water Year 2018, observed through April 30, 2018 was about 1.1 MAF, which is about 89 percent of average. In comparison to Water Year 2017, the observed Tulare Lake Region unimpaired runoff through April 30, 2017 was about 3.4 MAF, or about 267 percent of average.

On April 30, 2018, the Northern Sierra 8-Station Precipitation Index Water Year total was 38.7 inches, which is about 81 percent of the seasonal average to date and 74 percent of an average

water year (51.8 inches). During April, the total precipitation for the 8-Stations was 4.8 inches, or about 126 percent of average for the month. Last year on April 30, 2017, the Water Year 2017 seasonal total for the 8-Stations was 93.0 inches, or about 197 percent of average.

On April 30, 2018, the San Joaquin 5-Station Precipitation Index Water Year total was 29.4 inches, which is about 79 percent of the seasonal average to date and 72 percent of an average water year (40.2 inches). During April, the total precipitation for the 5-Stations was 3.7 inches, or about 105 percent of average for the month. Last year on April 30, 2017, the Water Year 2017 seasonal total for the 5-Stations was 71.0 inches, or about 193 percent of average.

On April 30, 2018, the Tulare Basin 6-Station Precipitation Index Water Year total was 17.3 inches, which is about 65 percent of the seasonal average to date and 60 percent of an average water year (28.8 inches). During April, the total precipitation for the 6-Stations was 2.4 inches, or about 96 percent of average for the month. Last year on April 30, 2017, the Water Year 2017 seasonal total for the 6-Stations was 45.8 inches, or about 180 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 04/30/2018					
Station	Water Year 2018 to 04/30/2018	% Average	Water Year 2017 to 04/30/2017	% Average	WY 2018 % of Avg WY (Oct 1 – Sep 30)
Mount Shasta	17.02	44	57.60	149	39
Eureka	34.53	94	49.73	135	86
Redding	18.98	61	44.70	143	55
South Lake Tahoe	17.22	100	45.79	267	84
Sacramento Executive Airport	14.46	84	32.82	190	78
Santa Rosa (Sonoma Co AP)	24.07	70	57.91	169	66
San Francisco	17.37	77	31.96	142	73
Stockton	9.09	69	21.52	164	65
Yosemite	26.62	77	73.46	213	70
Monterey	13.17	86	24.11	158	82
Paso Robles	9.35	77	14.01	115	73
Fresno	6.73	63	17.08	160	59
Bakersfield	3.93	65	7.74	127	61
Death Valley	0.62	33	1.28	68	26
Los Angeles	4.49	31	17.54	123	30
Riverside	3.59	31	11.86	102	29
Palm Springs	1.69	37	6.96	151	29
San Diego	3.19	32	11.67	117	31



Key Reservoir Storage (1,000) AF) as of 04/30/2018								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,930	2,020	96	2,448	79	---	518
Shasta Lake	Sacramento	4,195	3,924	107	4,552	92	-357	357
Lake Oroville	Feather	2,433	2,877	85	3,538	69	-943	1,105
New Bullards Bar Res	Yuba	932	767	121	966	96	33	34
Folsom Lake	American	866	729	119	977	89	58	111
New Melones Res	Stanislaus	2,062	1,505	137	2,400	86	-164	358
Don Pedro Res	Tuolumne	1,880	1,487	126	2,030	93	154	150
Lake McClure	Merced	914	607	151	1,025	89	60	111
Millerton Lake	San Joaquin	451	366	123	520	87	-38	69
Pine Flat Res	Kings	875	613	143	1,000	88	-125	125
Isabella	Kern	251	231	109	568	44	-110	317
San Luis Res	(Offstream)	1,756	1,822	96	2,041	86	---	283

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for June 2018, issued May 17, 2018, suggests average precipitation for all of California, except for the extreme northeastern area of the state where below-average precipitation is expected.

**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 fall 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 scheduled for release in summer 2018.

### **CENTRAL VALLEY FLOOD MANAGEMENT PLANNING (CVFMP)**

*The CVFMP focuses on working with stakeholders to formulate plans for reducing flood risk and increasing the resiliency of the State Plan of Flood Control (SPFC). 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.
- The OMRR&R workgroup was reconvened on March 14, 2018 and will meet on the second Wednesday of each month to address maintenance issues from a multi-agency perspective.
- Planning staff is coordinating with local partners on studies involving Little Egbert Tract and Paradise Cut Bypass.
- Four new Regional Planning contracts were executed on April 27, 2018 to re-engage the regions that had contracts expire in June 2017.
- CH2M/Jacobs consulting support for the CVFPP ends June 30, 2018.

#### **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.*

- No new information this month.

### **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 2016-17 – Sixty-seven final claims were received. Forty-eight final claims for \$5.3 million are being processed for reimbursement.
- Subventions Program FY 2017-18 – Seventy-two applications were received and reviewed. The CVFPB approved \$12 million for the FY 2017-2018 Funding Plan on June 23, 2017. Seventy-two work agreements have been executed.
- Subventions Program FY 2018-19 – Seventy-two applications for \$54 million were received and reviewed. The CVFPB approved \$12 million for the FY 2018-2019 Funding Plan on May 18, 2018.

### **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.*

- A size status protest for the Reach D construction contract bid was received on April 6, 2018. A Small Business Administration (SBA) decision was due on May 11, 2018.

### **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.*

- Draft Project Partnership Agreement (PPA) with CVFPB, USACE and local sponsor SAFCA is currently in negotiations.

### **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 April 24, 2018, is as follows:

- USACE turned the Auxiliary Spillway over to the U.S. Bureau of Reclamation on April 24, 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 awarded the contract and held a kick-off meeting for the Pre-Engineering Design (PED) of dikes #1-6.
- USACE has sent for bid for the Pre-Engineering Design (PED) of dikes #7 & 8, Left Wing Dam and Right Wing Dam.
- Draft Project Partnership Agreement (PPA) with USACE and local sponsor (SAFCA) is being finalized by USACE.

### **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.*

- Mobilization for construction of Phase 2A North of the project occurred during the week May 14, 2018 and construction activities related to site preparation have commenced.

### **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 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 this month.



**SAFCA – Sacramento River East Levee Project (EIP)**

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

- No new information this month.

**San Joaquin Area Flood Control Agency (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 this month.

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

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

- No new information this month.

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

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

- No new information this month.

**TRLIA – Feather River Levee Improvement Project (EIP)**

*This project resulted in a 200-year flood protection 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.*

- DWR executed a funding agreement for the community of Grayson in Stanislaus County.
- To date 23 of 35 funding agreements have been executed.

### **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.*

- The Public Draft EIS/EIR was released on May 25, 2018. The public comment period is from May 25, 2018 to July 9, 2018. A public meeting was held on June 7, 2018 from 4 to 6 PM at West Sacramento City Hall, 1110 West Capitol Avenue, West Sacramento, California 95691. The project Biological Assessment (BA) has been updated to respond to comments received from the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife and is being recirculated to the agencies.

### **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.

### **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.*

- The San Joaquin River Restoration Program (SJRRP) has completed a critical document that guides the program actions and funding into the next decade. The document – called the Funding Constrained Framework – prioritizes program actions and sets funding parameters for Stage 1 of the program, including developing volitional fish passage and habitat restoration. Key restoration goals for Stage 1 include allowing fish passage around Mendota Pool; seepage protections and levee improvements to allow river flows of up to 2,500 cubic-feet-per-second from Friant Dam to the Merced River confluence; fish passage improvements at Sack Dam, Eastside Bypass and other key barriers; and fish re-establishment. The full Funding Constrained Framework may be viewed at <http://www.restoresjr.net/program-releases-framework-to-guide-program-into-next-decade/>.
- DWR presented the SJRRP's proposed Eastside Bypass levee improvements to the Lower San Joaquin Levee District Board of Directors at their May board meeting. The levee improvements include installing two miles of soil-bentonite slurry wall in the right levee downstream of Sand Slough to reduce seepage and improve levee stability during restoration and flood flow releases. DWR has requested the board provide an endorsement letter for the project. Unfortunately, due to a lack of a quorum, the board tabled the discussion on the project until the June board meeting. DWR and Reclamation will be presenting the project to the board again on June 12, 2018.

#### **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 needed 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 in conjunction with the city of Chico has identified several debris choke points within the Chico creeks area and has been working with CDFW to remove debris from Big Chico Creek. The debris removal is an ongoing effort.

### **Feather River Hydraulic Model**

- No new information this month.

### **Mercury Characterization Studies**

- Staff met with representatives of SAFCA and their consultants to discuss and assess possible collaborative remedial efforts for the Basin that may be useful in expediting permitting processes for implementation of regional flood improvement and mitigation projects on which SAFCA and DWR are partners.

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

- 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, 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 May 2018:

- At Sycamore Creek 1, the gate was repaired.

### **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 May 2018:

- No new information this month.

**ROUTINE OPERATIONS AND MAINTENANCE:**

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

For the month of May 2018:

- No new information this month.

**NON-ROUTINE PROJECTS:**

**Butte Slough Outfall Gates (BSOG)**

- No new information this month.

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

- Bids have been obtained from pre-cast concrete vendors for the CC-2 bridge components.

**Knights Landing Outfall Gates Fish Barrier**

- No new information this month.

### **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 95 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.

## **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 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 May 2018:



- At Cache Creek, the following activities occurred:
  - 10 acres of vegetation cutting and limbing was completed,
  - 300 acres of road grading was completed,
  - Vegetation spot spraying is in progress, and
  - Vegetation mowing is in progress.
- At Cache Creek Settling Basin, the following activity occurred:
  - Vegetation cutting and limbing is in progress.
- At the East Levee of the Sutter Bypass, the following activities occurred:
  - Vegetation spot spraying is complete,
  - Vegetation mowing is in progress, and
  - Rodent depredating is in progress.
- At the East-West Interceptor Canal, the following activity occurred:
  - Vegetation spot spraying is complete.
- At the Upper 2 miles of the East Yolo Bypass, the following activities occurred:
  - Vegetation spot spraying is complete, and
  - Road gravel placement is in progress.
- At MA 1, the following activity occurred:
  - 13 miles of road gravel was placed.
- At MA 3, the following activities occurred:
  - 2 miles of road gravel was placed,
  - Vegetation mowing is in progress,
  - Vegetation spot spraying is in progress, and
  - Rodent depredating is in progress.
- At MA 5, the following activities occurred:
  - 7 gates were repaired or replaced,
  - 33.42 miles of road grading was completed,
  - Road gravel placement is in progress,
  - 33.42 miles of vegetation spot spraying was completed,
  - 28 miles of vegetation mowing was completed, and
  - Rodent depredating is completed.
- At MA 9, the following activities occurred:
  - Vegetation mastication is in progress,
  - Vegetation mowing is in progress, and
  - Vegetation cutting and limbing is in progress.
- At MA 13, the following activities occurred:
  - 1 pipe was repaired
  - Gate repair or replacement is in progress, and
  - Vegetation spot spraying is in progress.
- At Putah Creek, the following activities occurred:
  - Rodent baiting is in progress,
  - Vegetation cutting and limbing is in progress, and
  - Repair or replacement of gates is in progress.

- At Tisdale Bypass, the following activities occurred:
  - Vegetation mowing is complete,
  - Placement of road gravel is complete,
  - Vegetation spot spraying is in progress,
  - Gate repair or replacement is complete, and
  - Rodent depredating is in progress.
- At Wadsworth Canal, the following activities occurred:
  - Vegetation mowing is in progress, and
  - Rodent depredating is in progress.
- At the West Yolo Bypass Units 1-4, the following activity occurred:
  - Vegetation spot spraying is in progress.

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

- No new information this month.

#### **FLOOD SYSTEM EVALUATION AND REHABILITATION (FSER)**

*The FSER program includes evaluating, operating, maintaining, and repairing SPFC facilities pursuant to state assurances to the federal government. This FSER program supports implementation of the CVFPP-SSIA. The program improves DWR's integrated flood protection mission. Specific FSER activities include: program management; policy development; support for Board permitting and encroachment enforcement; corridor management strategy development; Title 23 regulation updates; easement identification and reconciliation; management of state-owned properties and easements; and integrated water management activities.*

#### **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.

- Three of the seven sites to repair on Willow Slough Bypass will start June 5, 2018. The other sites have potential impacts to nearby birds, so the work will stop there and shift to the one site on the Sacramento River. The work will shift back to Willow Slough after the birds have fledged. Two of the Wadsworth Canal sites will start June 25, 2018, but may be delayed due to nesting birds.

#### **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 May 2018:

- There are 32 DWR directed funding agreements for Phase 1 video inspections that have been executed with Local Maintaining Agencies (LMAs). There are 28 contracts in place and LMAs are starting the inspections. There are four contracts under finalization process.
- One DWR directed funding agreement has already been executed 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 101 of 333 pipes passing through levees in areas of DWR "O&M" responsibility.
- The amendment to the Nor-Cal Pipeline Services contract for \$250K is complete. We now have a total amount of \$1.25 million to clean and video inspect pipes.
- The final version of the Cured-In-Place Pipe contract for pipe rehabilitation is complete and closed on May 24, 2018 with two contractors placing bids.
- We are scheduled to continue the hydro vacuum/flushing followed by video inspection in MA 5, MA 7, and MA 16 in the coming weeks.
- Electro-Magnetic studies for missing pipes, for two MA 9 pipes in need of traffic control, are in process. Staff are working with AECOM on these studies. Studies in MA 17 are underway.

#### **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)**

This summer, DWR will conduct LMA outreach and field reconnaissance to prioritize eligible repairs and continue to enter into project agreements with the remaining program funding.

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

- No new information this month.

#### **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. In 2017, DWR completed erosion and stability repairs at 29 critical sites damaged by the storms. There are nine remaining critical repair sites, with construction scheduled to begin by July 1, 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, with preliminary design and permitting work underway.

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

USACE completed construction on 15 PL 84-99 repair sites damaged during the 2017 storms. Continuing these repairs, USACE anticipates construction of 21 sites this summer and fall, and 12 more sites in 2019. DWR and the CVFPB are working closely with USACE to manage the State's interest in these projects.

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

- No new information this month.

**OTHER ACTIVITIES:**

**Emergency Response Support**

- No new information this month.