

**CALIFORNIA DEPARTMENT OF WATER RESOURCES**

# **REPORT OF ACTIVITIES**

**AUGUST 2019**

## THE PURPOSE OF THIS REPORT...

is to provide a brief update to Central Valley Flood Protection Board (CVFPB) members on California Department of Water Resources (DWR) activities that occurred in the previous month. This report is organized by the five DWR mega-programs:

- Flood Emergency Response
- Flood Management Planning
- Floodplain Risk Management
- Flood Risk Reduction Projects
- Flood System Operations and Maintenance

Only programs with updates for this month have been included in this report. Programs not listed in this month's report may be included in future reports if updates are provided.

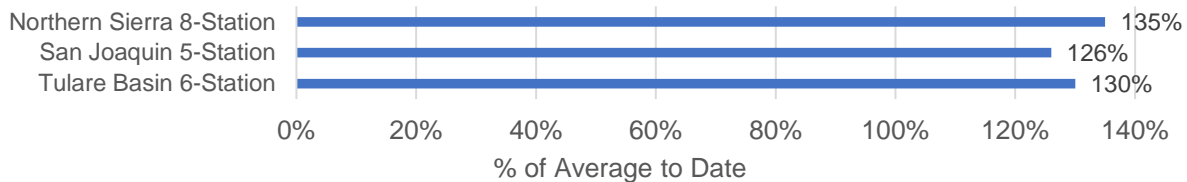
A full list of programs and program descriptions are available upon request. If you have any questions or concerns regarding this report, please call Ricardo Pineda at (916) 574-0632 or email [Ricardo.Pineda@water.ca.gov](mailto:Ricardo.Pineda@water.ca.gov).

## FLOOD EMERGENCY RESPONSE (FER)

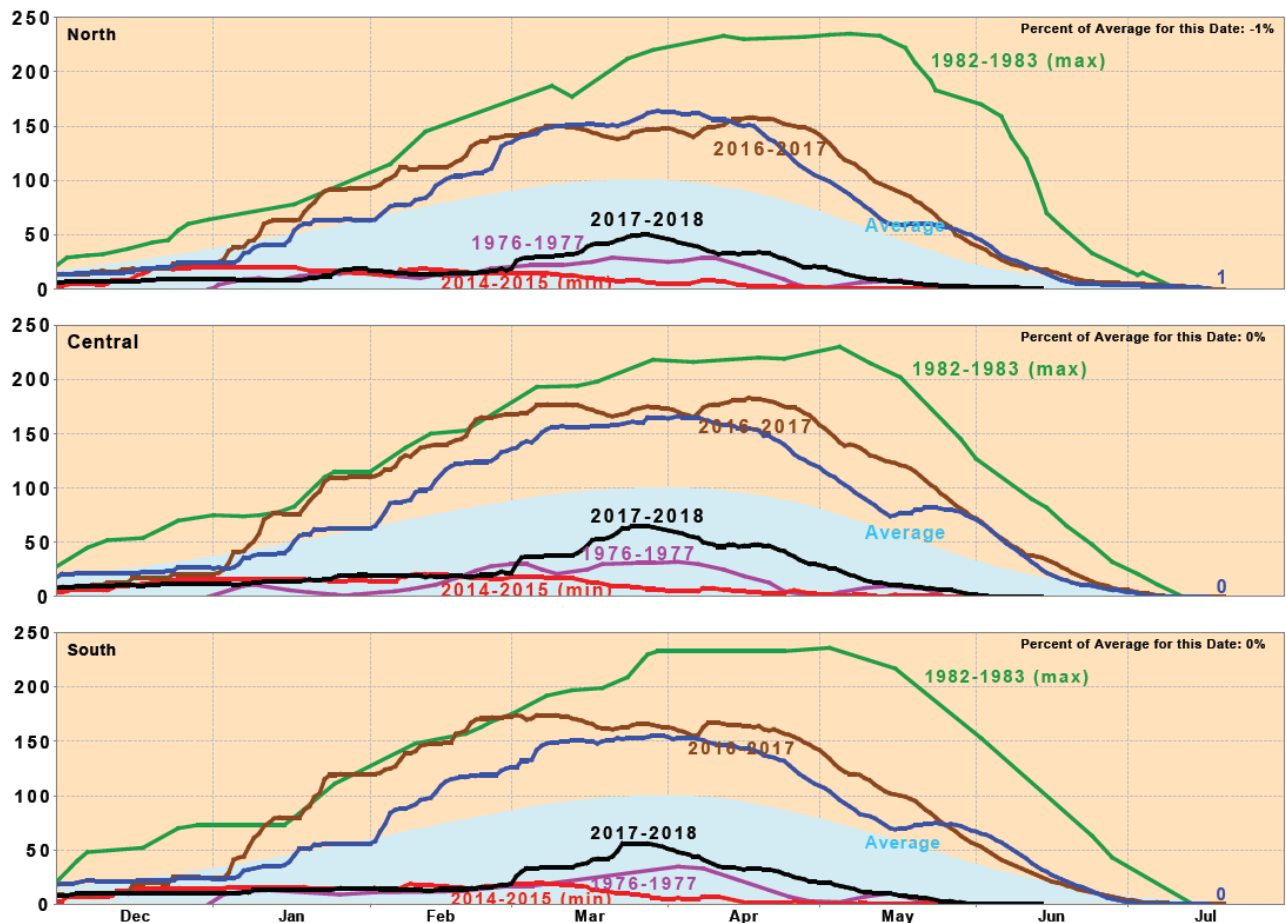
### FER // HYDRO-CLIMATE DATA COLLECTION & PRECIPITATION / RUNOFF FORECASTING

The month of July brought little to no precipitation and snow. The seasonal precipitation total remains above average for all of California. July temperatures were close to average.

**Precipitation Index August 12, 2019**



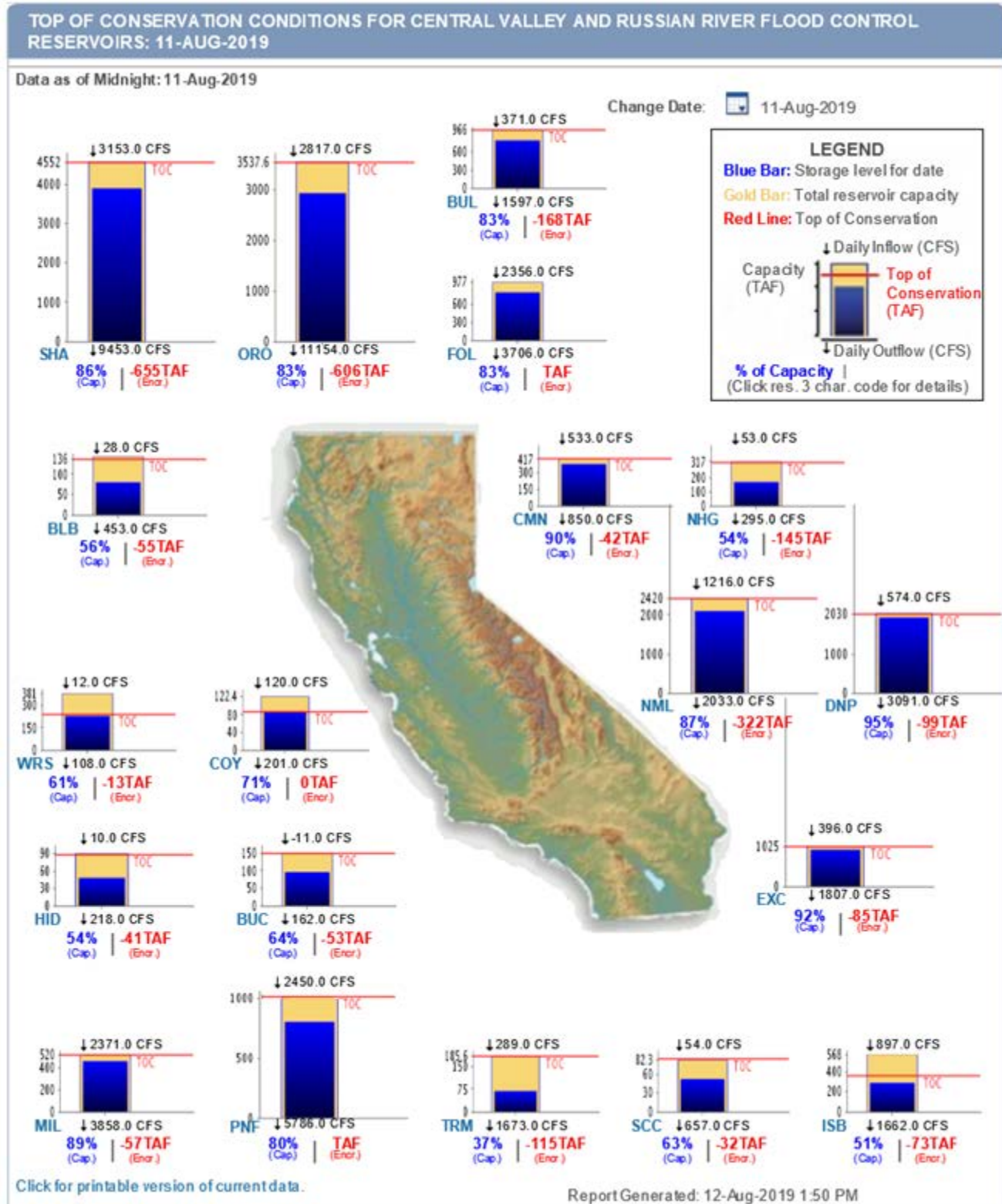
**California Snow Water Content, July 17, 2019, Percent of April 1 Average**



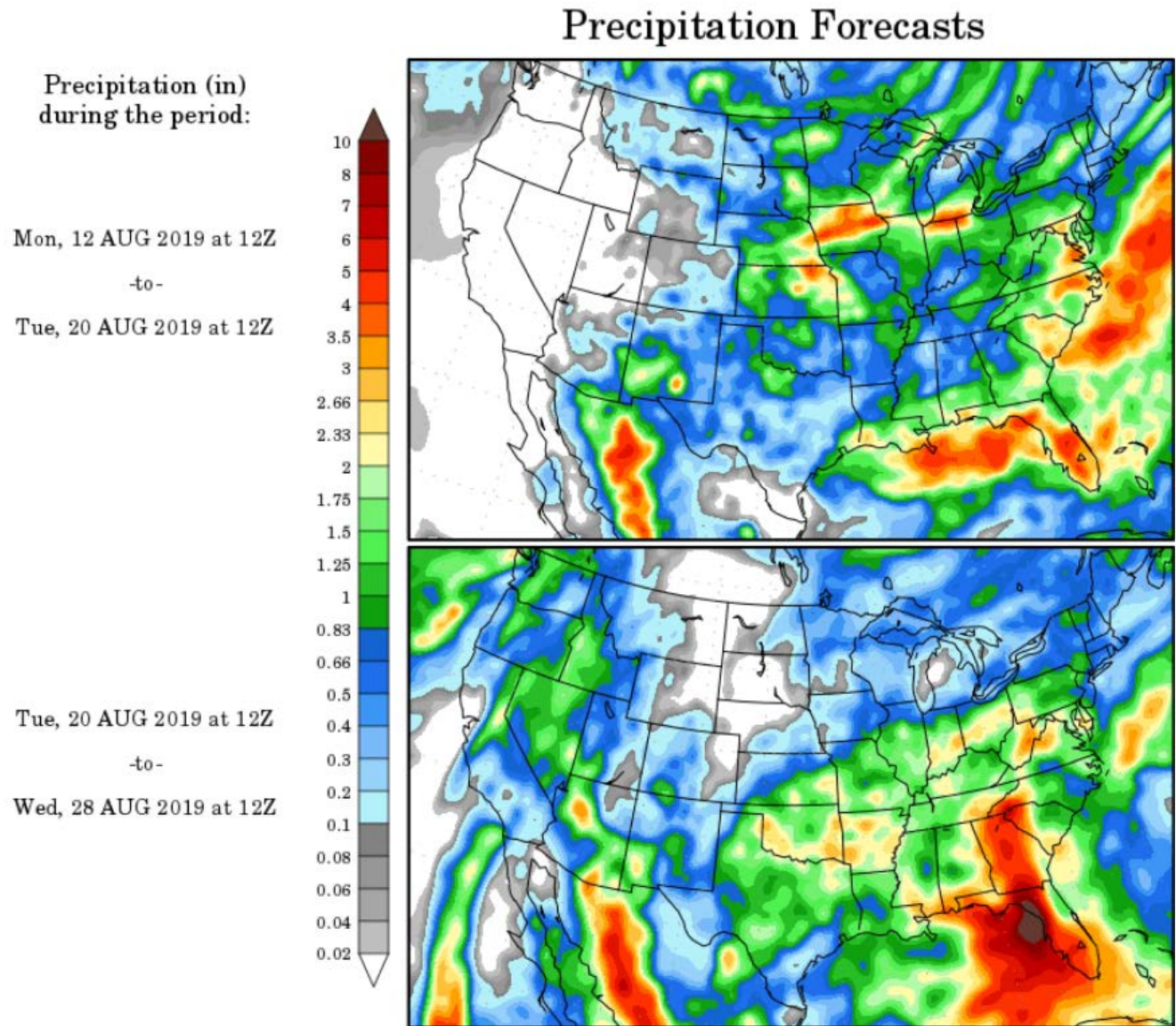
Statewide Percent of April 1: 0%

Statewide Percent of Average for Date: 0%

California's reservoirs have varying storage levels. Exchequer, Camanche, and Don Pedro Reservoirs are still at or above 90% of capacity. In July, notable flood control releases were made at Isabella, Natomas, Oroville, and Pine Flat.



During third week of August, California is expected to experience very dry conditions. The fourth week of August is expected to bring up to 2 inches of precipitation. The two 8-day panel graphics (8/12-8/20 and 8/20-8/28) from the Global Forecast System (GFS) weather model shows this result:





**National Weather Service (NWS) Climate Prediction Center (CPC)** long-range, 1-month precipitation outlook for August 2019 suggests:

- Average precipitation statewide
- Average temperatures for Central California and above normal temperatures for the northern and southern tips of California.
- Staff updated forecasting equations using the latest climate data, prepared renewal applications for Special Use Permits on several National Forests, and planned for the Annual Meeting of the California Cooperative Snow Surveys Program scheduled for early November.
- Staff serviced DWR's Beach Meadow (BCH) and Tunnel Guard (TUN) in the Kern River Basin, Quaking Aspen (QUA) in the Tulare River Basin, Charlotte Lake (CRL) in the Kings River Basin, Rock Creek Lakes (RCK) and South Lake (SLK) in the Owens River Basin, Highland Meadow (HHM) in the Mokelumne River Basin; and assessed Farewell Gap (FRW) and Panther Meadow (PTM) in the Kaweah River Basin, Bishop Pass (BSH) and Bishop Pass cabin in the Kings River Basin; and maintained U.S. Bureau of Reclamation's (USBR) hydrometeorological stations Stanislaus Meadow (SLM) and Calaveras Ranger Station (CVS) in the Stanislaus River Basin, Sand Flat (SDF) in the Sacramento River Basin, Silver Lake (SIL), Blue Canyon (BLC), and Huysink (HYS) in the American River Basin, Medicine Lake (MED) in the Pit River Basin, Peterson Flat (PET), Mumbo Basin (MUM) and Highland Lakes (HIG) in the Trinity River Basin, and Stouts Meadow (STM) in the McCloud River Basin.

## **FER // RESERVOIR OPERATIONS & RIVER FORECASTING**

- Statewide reservoir storage totaled 34 million-acre-feet as of July 1, 2019.
  - 120 percent of average to date.
  - 89 percent of capacity for this time of year.
- On July 17, staff attended the San Joaquin Forecast-Coordinated Operations (F-CO) quarterly meeting. Topics of discussion included progress of Airborne Snow Observatory (ASO) and infrastructure grants, planning a fall/winter exercise and lessons learned from the ASO data collected from last winter/spring.
- On July 18, staff conducted a progress meeting for the Upper Sacramento/Feather NAVD 88 datum update project. Progress and Data Collection Platform (DCP) changeover schedules were discussed, as well as updates on outreach efforts.
- On July 24, staff met with the Division of Safety of Dams (DSOD) to discuss early activities of the Headwater to Floodplains (H2F) program with respect to telemetered gaging of reservoir spillway flows.
- On August 1, staff met with NWS and Rob Hartman to kickstart the production of a document to present an overview of NWS's Hydrologic Ensemble Forecast Service (HEFS), and its proper applications.
- On August 6-8, staff attended a Forecast Informed Reservoir Operations (FIRO) Workshop at Scripps Institute. Workshop topics included progress on FIRO activities at Lake Mendocino in the Russian River Basin and Prado Dam in Santa Ana River Basin, the need for adaptive water control manuals, research and advancements on the understanding atmospheric rivers and biological/environmental impacts.

**FER // FLOOD EMERGENCY PREPAREDNESS & OPERATIONS**

- On July 3, Local Maintaining Agency Assessment Section (LMAAS) provided Flood Emergency Response Information Exchange (FERIX) – Utility Crossing Inventory Program (UCIP) training to the City of Sacramento staff and Flood Maintaining Office (FMO) staff.
- On July 24, Flood Operations Branch staff met with the U.S. Coast Guard (USCG), National Weather Service, and California-Nevada River Forecast Center to discuss agency updates, review roles and responsibilities, and demonstrate web tools useful to USCG operations. These meetings will be continued on a quarterly basis.
- On August 7, Hydrology and Flood Operations Office staff participated at the Oroville Facilities Emergency Action Plan Functional Exercise.

**FER // REAL-TIME FLOOD CONDITIONS, STATUS, & WARNING**

- The Levee Log update is temporarily on hold while a review of the QA/QC process is being conducted. Once reviewed, a reassessment of the status of QA final work will be provided.
- On June 28, Local Maintaining Agency Assessment Section (LMAAS) provided 2018 UCIP Urgent Priority list to CVFPB for board's action.
- On July 3, LMAAS provided Flood Emergency Response Information Exchange (FERIX) – Utility Crossing Inventory Program (UCIP) training to the City of Sacramento staff and Flood Maintaining Office (FMO) staff.
- On July 8, LMAAS compiled annual reporting reminder letters, reporting instructions, informational flyers to be sent out to via DWR Printing Services.
- On July 15, Local Maintaining Agency Section (LMAAS) posted a new LMA Fact Sheet, a new sample report, the documents sent in the mass mailer, and a new user guide on LMA page on CDEC and CDEC4gov.
- On July 15, LMAAS created a 16-page step-by-step user guide for the new reporting system.
- Flood Project Inspection Section (FPIS) staff closed 158 CVFPB permits in the month of July, closing a total of 582 permits so far for 2019.
- FPIS inspectors completed 32 structure inspections finalizing a total of 42 out of 62.
- FPIS inspectors completed 5 of 26 channel inspections.
- Inspectors collected 11 miles of street view imagery (pilot study) in July and have a total of 264 miles collected for 2019.
- FPIS staff participated in the monthly Inspection Compliance Workgroup meeting. This group is working with the Board and LMA's to find ways to assist LMA's with PL84-99 compliance.

## **FLOODPLAIN RISK MANAGEMENT (FRM)**

### **FRM // TECHNICAL ASSISTANCE**

- The Community Assistance staff conducted a Community Assistance Visits in the City of Loyalton.
- The Community Assistance staff conducted two workshops (CA DWR Floodplain Management Review); one in San Jose, CA and the other in Ventura, CA.

### **FRM // INTERAGENCY COLLABORATION AND OUTREACH**

- On Wednesday, July 10, staff hosted kick-off meeting for the H2F Event Tracker database development.
- On Friday, July 12, staff attended the FMA Quarterly Board Meeting.
- On Monday, July 22, staff met with other state and federal partners to discuss next steps for the Dam Technical Assistance Program.
- On Tuesday, July 23, staff met with Silver Jackets federal partners to strengthen relationships and bolster alignment between agencies.
- On Tuesday, July 23, staff hosted a Ca Flood Preparedness Week (CFPW) statewide agency coordination call.
- On Thursday, July 25, staff provided H2F and CFPW program updates to DFM's Environmental Coordination Committee.
- On Monday, July 29, staff attended the kick-off planning meeting for the City of Sacramento Flood Preparedness Fun Fair.
- On Tuesday, July 30, staff hosted a Watershed University Webinar on Local Agency CRS with Carl Walker from Harris and Associates.

## **FLOOD RISK REDUCTION PROJECTS (FRRP)**

### **FRRP // DELTA LEVEE SYSTEM INTEGRITY (DLSI)**

#### **Delta Levees Maintenance Subventions Program**

- **Subventions Program FY 2016-17**
  - 67 final claims received.
  - 62 final claims for \$7.7 million have been processed for reimbursement.
- **Subventions Program FY 2017-18**
  - 71 applications were received and reviewed.
  - CVFPB approved \$14.5 million for the FY 2017-18 Funding Plan.
  - 57 final claims for \$10 million are being processed for reimbursement.
- **Subventions Program FY 2018-19**
  - 72 applications for \$54 million were received and reviewed.
  - The CVFPB approved \$12 million for the FY 2018-19 Funding Plan.
- **Subventions Program FY 2019-20**
  - 72 applications for \$54 million were received and reviewed.
  - The CVFPB approved \$10 million for the FY 2018-19 Funding Plan.



## **FRRP // USACE/CVFPB PROJECTS**

### **American River Watershed Project – WRDA 2016**

- Seepage, Stability and Overtopping:
  - Reach D, Contract 1 - contract awarded. Contractor mobilizing.
  - SREL (Sacramento River East Levee) Contract 1 - 95% design by SAFCA.
  - SREL Contract 2 - Design RFP award August 2019.
  - SREL Contract 3 - RTA package scheduled for August 2019.
- Erosion:
  - American River - Contract 1 - design at 65%.
  - American River - Contract 2 - Erosion assessment is complete; 10% concept designs are being produced.
  - Sacramento River - Expert Opinion Elicitation panel occurring.
- Sacramento Weir & Bypass:
  - 65% design underway, to be completed in November 2019.
  - Fish Passage separated into small working group, technical lead by HDR.
  - DWR is continuing work on the Sacramento Bypass widening effort (LEBLS); scheduled for contract award in March 2020.
- Mitigation:
  - Beach-Stone Lakes Mitigation Site Project construction is anticipated to begin in late summer 2019. This will be the first mitigation site established to compensate for tree impacts resulting from the ARCF 2016 Project.

### **Folsom Dam Modifications Joint Federal Project (JFP)**

- Construction to complete many of the project punch-list items is underway.
- Review of the high velocity oxygenated fuel coating corrosion report for the tainter gate operation rods is underway.

### **Folsom Dam Raise Project**

- USACE Engineering Design (PED) of dikes #1-6, 8, Mormon Island Auxiliary Dam, Left Wing Dam, Right Wing Dam, and Main Dam Spillway is underway.
- USACE Bid for construction of dike #7, has completed and is due for award August 12, 2019.

### **West Sacramento Project (PED)**

- West Sacramento Project has issued a RFP for the design of the Yolo Bypass East Levee. The team hopes to have an approved contract for consideration of the WSAFCA Board at their meeting in August 2019.

## **FLOOD SYSTEM OPERATIONS & MAINTENANCE (FSO&M)**

*Flood Maintenance Office (FMO) is responsible for two areas of State Plan of Flood Control (SPFC) facilities, State Maintained Areas (SMAs), which are authorized by CWC Section 8361, and ten Maintenance Areas (MAs), which are described in CWC Section 12878. SMAs are funded by state general fund, while MAs are on reimbursable accounts funded by property owners protected by the MA levees and facilities.*

### **State Maintained Areas (SMAs)**

- *Levees: ~145 miles*
- *Channels: ~1,200 miles*
- *Flood Structures: ~30 (11 weirs, 5 gate structures, 4 pumping plants, crossing bridges, etc.)*
- *Collecting Canals: ~60 miles*

### **Maintenance Areas (MAs)**

*Currently, FMO maintains ten MAs: MA01, 03, 04, 05, 07, 09, 12, 13, 16, and 17.*

- *Levees: ~150 miles*
- *Structures: ~1 pumping plant and 1 diversion weir*

## **OPERATIONS & MAINTENANCE (O&M)**

*Listed activities are mandated by O&M manuals for facilities in SMAs or MAs. This work is performed by two maintenance yards located in West Sacramento and Sutter with technical and environmental support from JOC.*

- *Levee and channel vegetation management*
- *Access road and levee crown maintenance*
- *Debris and obstruction removal*
- *Rodent abatement*
- *Rodent damage repair*
- *Levee erosion repair*
- *Channel scour repair*
- *Minor sediment removal*
- *Pumping plant, weir, outfall gates, and bridge operation, maintenance, and repair*
- *Pipe/Culvert repair*

*FMO has implemented the Flood Maintenance Assistance Program (FMAP) with annual funding to increase the level of maintenance in SMAs and support Local Maintaining Agencies (LMAs) and MAs.*

## **State Maintained Areas (SMA) Activities**

### **Sacramento Yard**

- *Cache Creek Levees: .5 mile of vegetation masticating (in progress).*
- *Cache Creek Levees: Rodent grouting (in progress).*

- Cache Creek Levees: 1 rodent burrow excavated and backfilled with 6 cy of material (complete).
- Cache Creek Levees: 22 miles of vegetation mowing (complete).
- Cache Creek Levees: 22 miles of vegetation burning (complete).
- Cache Creek Levees: 22 miles of road grading (complete).
- Cache Creek Settling Basin – Channel: 30 acres of vegetation mowing (in progress).
- East Levee Sacramento Bypass: 2 miles of vegetation spot spraying (in progress).
- Fremont Weir: 12 cy of debris removal (complete).
- Magpie Creek Diversion: Rodent depredating (complete).
- Putah Creek: Vegetation spot spraying (in progress).
- Putah Creek: Vegetation mowing (in progress).
- Putah Creek: Vegetation burning (in progress).
- Sacramento Bypass Levee: Vegetation mowing (in progress).
- Sacramento River (Collinsville to Knights Landing): 150 cy scour repair at Ponds 10 and 12 (in progress).
- Schreiner's and Furlon Properties: 125 acres of mowing (complete).
- West Yolo Bypass levees, Units 1-4: 5.7 miles of vegetation mowing (complete).
- West Yolo Bypass levees, Units 1-4: 5.7 miles of vegetation burning (complete).
- Willow Slough Bypass levee: Vegetation mowing (in progress).
- Willow Slough Bypass levee: Vegetation burning (in progress).

***Sutter Yard***

- East Levee Sacramento River: 10 cy of debris removal (complete).
- East Levee Sacramento River: Vegetation burning (in progress).
- East Levee Sacramento River: Rodent baiting (in progress).
- East Levee Sacramento River: Rodent fumigating (complete).
- East Levee Sacramento River: 20 miles of vegetation mowing (complete).
- Moulton Bypass Levees: Rodent baiting (in progress).
- Moulton Bypass Levees: Rodent fumigating (in progress).

**Maintenance Area (MA) Activities*****MA01***

- Vegetation dragging (in progress).
- Vegetation spot spraying (in progress).
- Rodent fumigating (complete).
- 17 miles of vegetation burning (complete).

***MA04***

- 3 miles of vegetation mowing (complete).

***MA05***

- 25 miles of vegetation burning (in progress).
- 27 miles of vegetation disking (complete).

*MA09*

- 21.3 acres vegetation cutting and limbing (in progress).
- Vegetation mowing (in progress).

*MA12*

- 11.22 miles of vegetation burning (complete).
- Rodent fumigating (complete).

*MA13*

- 35 miles of vegetation burning (in progress).
- 33 cy of debris removal (complete).

*MA16*

- 4.09 miles of vegetation spot spraying (complete).

**Flood Maintenance Assistance Program (FMAP) (provided by FPO/FSSB)**

- 49 FMAP applications have been submitted for FY 18/19.
- Advances for FY 18/19 FMAP participants to be distributed in July 2019.
- MA FMAP is state operations. The funding was committed by June 30, 2019.
- Total commitment for FY19/20 is approximately \$10M.
- Requested submittals for FY 19/20 due by July 31, 2019.
- To date, 41 LMAs have submitted packages for FY19/20.
- DWR is processing fund allocations and anticipate completion by mid-September.

**STUDIES & EVALUATIONS**

*Activities related to evaluating all SPFC facilities to identify any deficiencies, and prioritizing (emergency, critical, serious, monitor) them for repair, rehabilitation, or replacement. These evaluations include:*

- *Levee stability*
- *Levee penetrations, such as pipes and culverts*
- *Channel capacity*
- *Structure functionality*
- *Levee Tree Assessment*
- *Encroachments*
- *O&M right-of-way*

**Channel Evaluation***Cache Creek Channel Evaluation*

- Levee crown elevation comparison is in process at the HEC-RAS cross section locations and bench marks' elevation using the latest survey data, previous survey data, and as-built data.

**Levee Evaluation***Pipe/Culvert Evaluation*

- Phase 1 video inspections:
  - 157 of 258 pipes passing through SMA levees have been video inspected by FMO.

*Levee Tree Assessment (LTA)*

- MA09 tree assessment is on-going.

*Encroachments*

- FMO continues to coordinate with Hydrology and Flood Operations Office, California Data Exchange Center, Flood Projects Office, and CVFPB to prepare a comprehensive list of encroachments in the SMAs and MAs.

**DEFERRED MAINTENANCE**

*Maintenance that has not been completed to keep the facilities in an acceptable and operable condition will result in deferred maintenance. If the work is not completed as part of O&M activities, it will lead to a larger maintenance issue and cost significantly more.*

**2017 Emergency Rehab (provided by FPO/FSSB)**

- All 39 critical sites identified for state-led repair resulting from the 2017 Storm Events have been completed. Finalization of real estate and mitigation work is anticipated to be complete by 2020.

**Levee Rehab (provided by FPO/FSSB)***Flood System Repair Program (FSRP)*

- At this time, DWR has committed all available bond funding for FSRP use. LMA outreach and field reconnaissance will continue to identify and prioritize eligible repairs for future consideration if additional funding becomes available. DWR will continue to manage the existing FSRP executed contracts to ensure Prop 1E liquidation is complete.

*Storm Damage DWR Rehabilitation (SDDR), Phases 4 and 5*

- This effort continues the site repair work that started with the 2017 Emergency Rehabilitation work. Now that all the identified critical sites have been completed (Phases I, II and III), work continues on the identified serious sites. Phase IV and V construction of approximately 27 sites is scheduled for fall 2020 construction. Staff continues to work on environmental compliance and permitting documents for these sites.

**Pipe Rehab**

- A total of 59 pipes have been rehabilitated using the Cured In Place Pipe (CIPP) method in State Maintained Areas (SMAs).



- Rehabilitation of 37 pipes has been completed using the CIPP lining method in Willow Slough, Putah Creek, and West Levee Yolo Bypass. New flood control gates have been installed. Five pipes have irrigation/water impacts and will be lined later this year. Four pipes need remedial work before CIPP lining is performed.
- The crew continued the CIPP rehabilitation work on Butte Creek. Thirteen pipes have been lined along Butte Creek.
- The crew mobilized on July 16, 2019 to start the CIPP rehabilitation on Cherokee Canal. Nine pipes have been lined along Cherokee Canal.
- FMO is coordinating with DOE on contracting options for the removal and replacement of a pipe with holes in it located on Willow Slough. County Road 28H runs along the levee crown at this location, and there are voids located below the road due to the failed pipe. This road is used to access the Yolo County Landfill which has frequent heavy truck traffic. FMO has been coordinating the repair options with DOE and has informed CVFPB of this project. Depending on the contracting method used, construction can start anytime between August 2019 to October 2019 and last approximately one to two weeks.

The following table provides an overall status update of the pipe inspection/rehabilitation work:

<b>DMP-Pipes Program</b>		<b>Status Update: 7/30/19</b>	
	<b>MAs/SMAs</b>	<b>Non-Participating LMAs</b>	<b>Participating LMAs<sup>1</sup></b>
<b>Phase 1</b>			
Total pipes for C&I (Cleaning & Inspection):	258	161	995
Total pipes completed:	157	134	220
Irrigation Impacted Pipes:	50	7	TBD
Continuous water Pipes:	28	10	TBD
Vault access required:	23	--	TBD
<b>Geophysical Evaluation*</b>			
"Not-Found" Pipe Location:			
Total Pipes for Geophysics (GP)	137	174	221
Total Pipes GP Complete	137	172	221
<b>Phase 2 - R/R/R</b>			
CIPP Slip-Lining Rehabilitation Completed**	59	TBD	TBD
Removal and Replacement***	1 planned	TBD	(See footnote 1)
Removal	TBD	TBD	TBD
Abandonment in Place	TBD	TBD	TBD

- \* DWR Contractor completing geophysical evaluation in MAs/STs, Non-Participating LMAs, and where requested by participating LMAs
- \*\* DWR has a contract for Cured In Place Pipe (CIPP) Slip-Lining Rehabilitation.
- \*\*\* RD784 has one pipe in Phase 2 agreement with DWR for removal/replacement that is scheduled for construction in summer 2019; design/permitting work is completed.
- 1 - Many participating LMAs are reporting difficulty in contracting geophysics, pipe cleaning, and video inspection work.

## **Channel Rehab**

### *Elder Creek Channel Rehab*

- Water in the channel continues to delay this year's project. The channel is being monitored for when the channel dries out.

## **Structural Rehab**

### *Butte Slough Outfall Gate Rehabilitation*

- DWR is updating the project description and design plans based on input from natural resource agencies with the goal of contracting the rehabilitation work in summer 2020.

### *Tisdale Weir Rehabilitation and Fish Passage Project*

- No significant activity for this month.

### *Knights Landing Outfall Gates Fish Barrier*

- Construction is expected in summer 2020.

## **Yard Rehab**

### *Sacramento Yard Improvements*

- Phase 1 work restarted after the weather cleared. The waterline and the remaining electrical duct bank work is complete. Subgrade preparation and concrete flatwork is underway with paving to be completed in August 2019.
- Phase 1 is expected to be completed in Fall 2019.
- Phase 2 work, which includes electrical upgrades, has been delayed due to an incomplete design. A new design team is putting together.

## **ENVIRONMENTAL INITIATIVES**

*Environment coordination, advance mitigation, and other holistic measures to expedite our project delivery. FMO is looking to find long-term solutions that will allow more effective and efficient O&M by identifying and implementing environmental measures as part of the system.*

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

No significant activity for this month.

## **O&M Habitat Conservation Plan (HCP)**

DWR is reviewing permitting pathways on a landscape scale for coverage of DWR flood maintenance activities.

**SWIF - Endangered Species Act, Section 7 Nexus**

A site visit was conducted with U.S. Forestry and Wildlife Service (USFWS) on July 25, 2019, to obtain any comments or concerns about the biological opinion. The outcome was that USFWS may be open to placing rock as mitigation for filling rodent holes.

**FEDERAL PROGRAM**

*FMO's interaction with federal agencies, mainly USACE, in rehabilitation of deferred maintenance projects.*

**Federal Public Law 84-99 Emergency Repair Project (PL 84-99) (provided by FPO/FSSB)**

- 51 sites were submitted by LMAs after the 2019 Public Notice & that the U.S. Army Corps of Engineers determined 6 of those to be eligible for PL 84-99 rehabilitation assistance.