

CALIFORNIA DEPARTMENT OF WATER RESOURCES

REPORT OF ACTIVITIES

SEPTEMBER 2018

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 projects and 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.

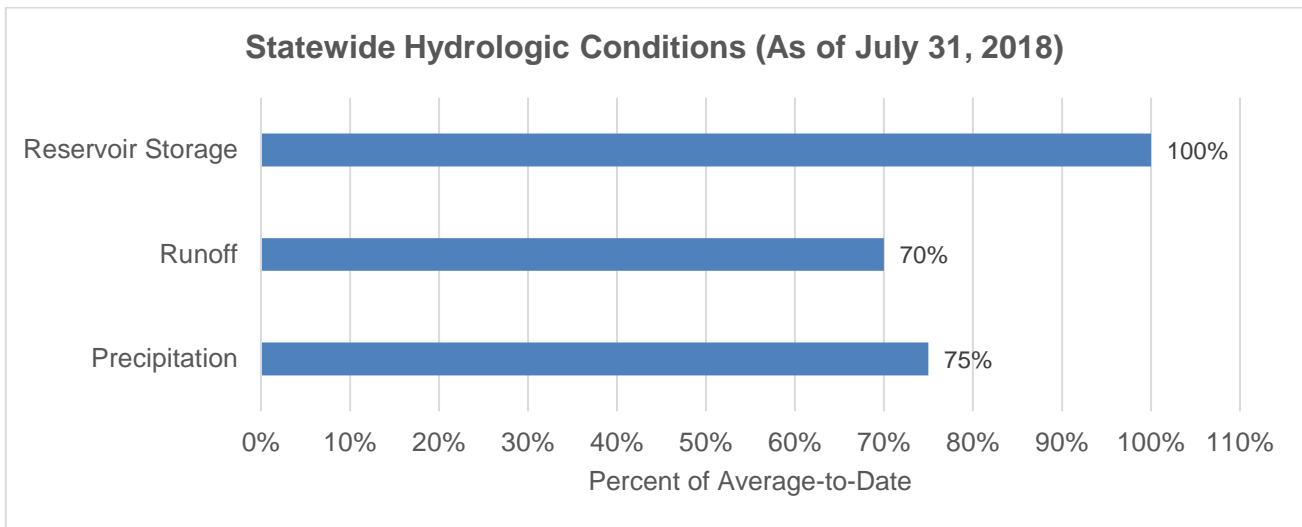
A full list of programs and program descriptions are available upon request. Please email Mitra.Emami@water.ca.gov for questions or concerns.

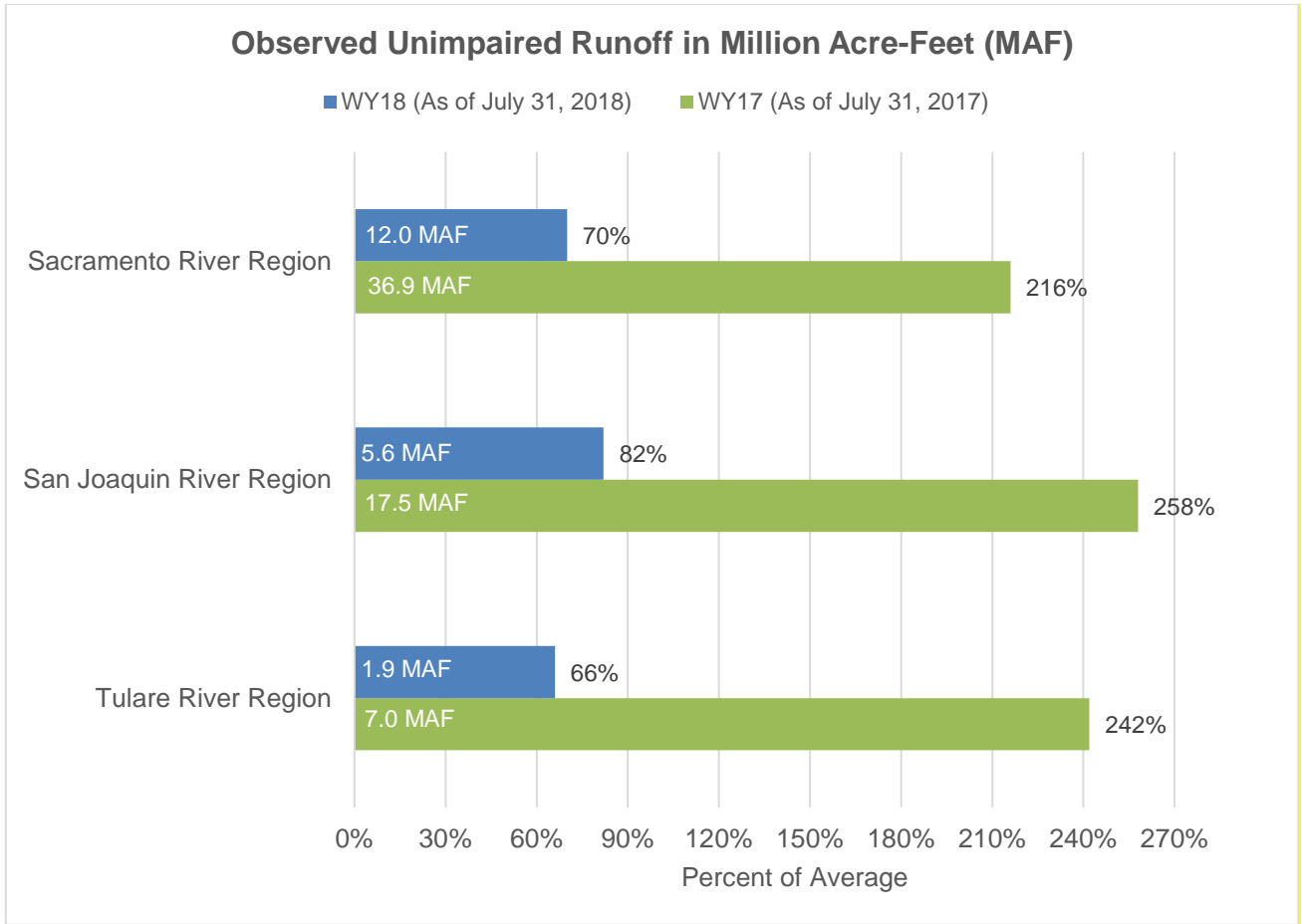
FLOOD EMERGENCY RESPONSE (FER)

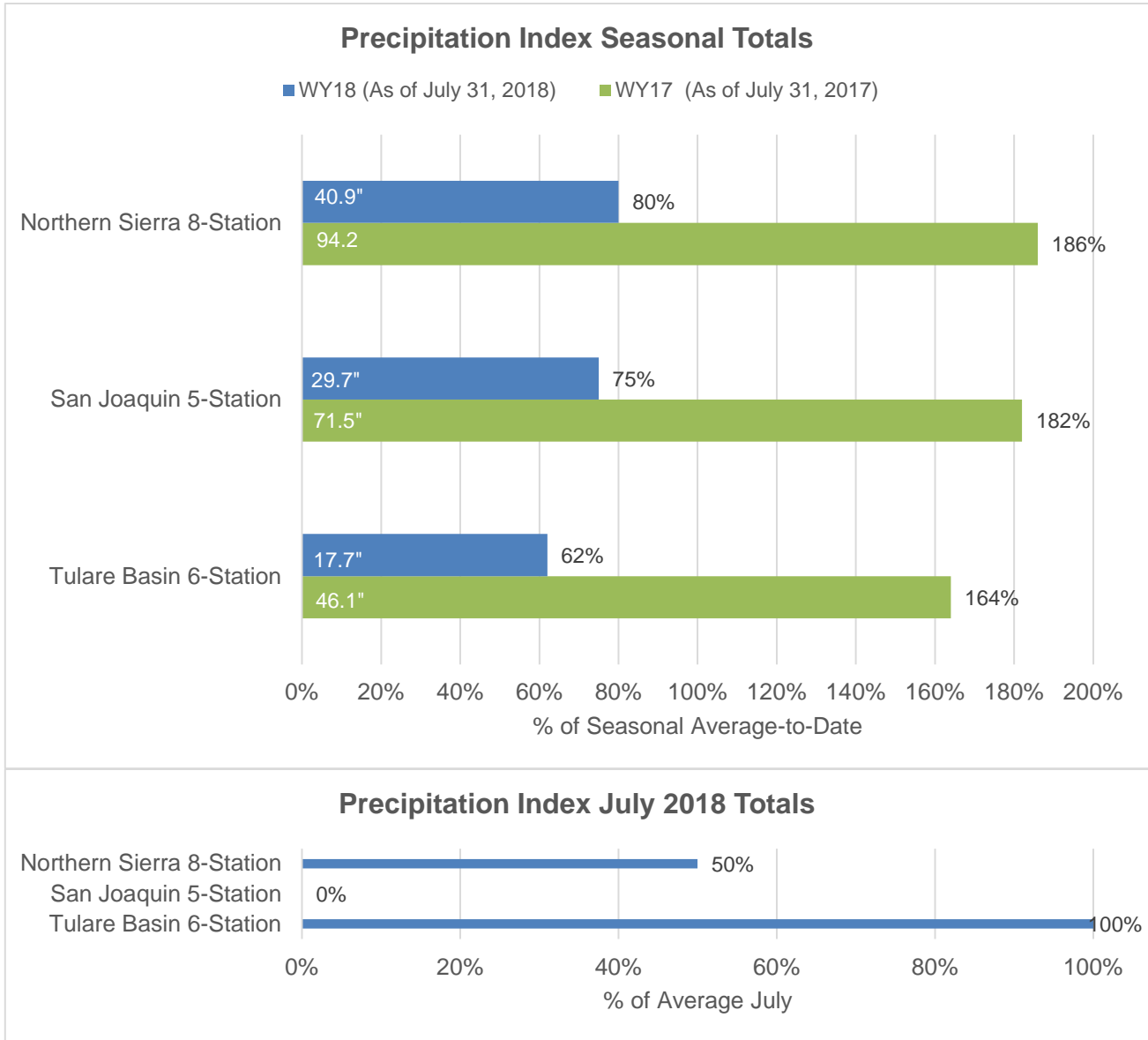
FER // REAL-TIME FLOOD CONDITIONS, STATUS, & WARNING

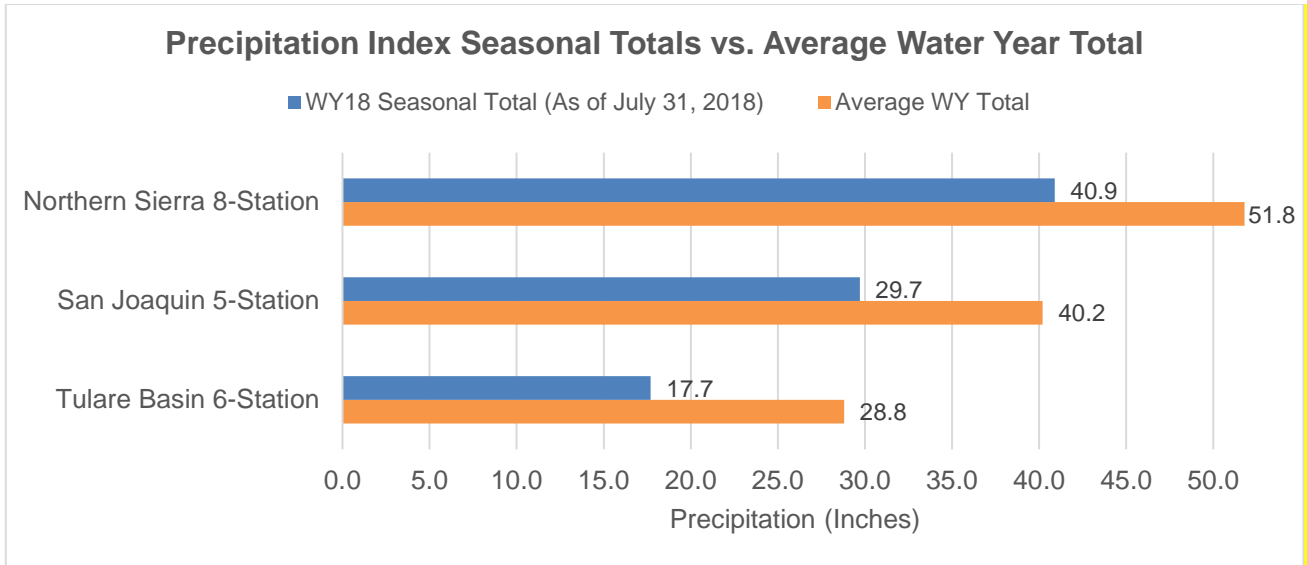
The Flood Project Inspection Section completed its Structures and Channels Inspection and posted the results on California Data Exchange Center (CDEC). As of 8/31/2018, Inspectors closed a total of 251 CVFPB permits.

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









Daily Precipitation (inches) for Selected Stations as of 07/31/2018					
Station	Water Year 2018 to July 30, 2018	% Average	Water Year 2017 to July 31, 2017	% Average	WY 2018% of Avg Water Year (Oct 1 – Sep 30)
Mount Shasta	19.48	46	59.40	139	45
Eureka	35.91	91	51.48	131	89
Redding	19.68	58	45.54	135	57
South Lake Tahoe	20.84	108	47.17	245	102
Sacramento Executive Airport	15.06	83	32.97	181	81
Santa Rosa (Sonoma Co AP)	24.20	68	58.21	162	67
San Francisco	17.42	75	32.06	137	74
Stockton	9.22	67	21.62	157	66
Yosemite	27.35	74	74.44	200	72
Monterey	13.26	84	24.20	152	82
Paso Robles	9.35	75	14.19	114	73
Fresno	6.73	59	17.20	152	59
Bakersfield	3.95	62	7.80	123	61
Death Valley	0.67	33	1.28	63	28
Los Angeles	4.58	31	17.69	121	31
Riverside	3.76	31	11.90	99	30
Palm Springs	2.80	56	7.02	139	49
San Diego	3.32	33	12.27	121	32

National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for September 2018 (issued August 31, 2018), suggests:

- Above-average precipitation for the extreme southeastern portion of California.
- Average precipitation for the remainder of the State.

FER // RESERVOIR OPERATIONS & RIVER FORECASTING

Key Reservoir Storage (1,000 AF) as of 07/31/2018								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,645	1,954	84	2,448	67	---	803
Shasta Lake	Sacramento	3,147	3,234	97	4,552	69	-1,405	1,405
Lake Oroville	Feather	1,944	2,579	75	3,538	55	-1,594	1,594
New Bullards Bar Res	Yuba	725	750	97	966	75	-241	241
Folsom Lake	American	631	691	91	977	65	-346	346
New Melones Res	Stanislaus	1,871	1,467	128	2,400	78	-549	549
Don Pedro Res	Tuolumne	1,708	1,548	110	2,030	84	-322	322
Lake McClure	Merced	787	627	125	1,025	77	-238	238
Millerton Lake	San Joaquin	347	327	106	520	67	-173	173
Pine Flat Res	Kings	430	509	84	1,000	43	-570	570
Isabella	Kern	148	274	54	568	26	-214	420
San Luis Res	(Offstream)	906	996	91	2,041	44	---	1,133

FLOOD MANAGEMENT PLANNING (FMP)

FMP // STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING

- Staff participated in several panels during the Floodplain Management Association’s (FMA) annual conference in Reno, Nevada during the week of September 4. Specifically, staff participated in the “Investing in California’s Flood Future – From Controversy to Commitment” panel on Wednesday, September 5 and “Performance Tracking: Securing Sustainable Funding for Management Actions within the Central Valley”.

FLOODPLAIN RISK MANGEMENT (FRM)

FRM // FLOODPLAIN MANAGEMENT ASSISTANCE

- For the month of August, we conducted 5 Community Assistance Visit Meetings:
 - August 8, 2018 - City of Carpenteria
 - August 22, 2018 - City of Aliso Viejo
 - August 23, 2018 - City of Costa Mesa
 - August 30, 2018 - City of Red Bluff
 - August 30, 2018 - County of Tehama
- Led and directed the two-day business meeting for the State NFIP Coordinators at the FEMA Mitigation Clubhouse held at FEMA Region Headquarters in Oakland on August 1 and 2, 2018.
- Flood Risk Notification
 - August 31, 2018: Mailed 253,000 Flood Risk Notification mailers to Single Property Owners in the Levee Flood Protection Zones (LFPZs).

- Approximately 21,000 additional mailers to be mailed to Single Property Owners and 28,000 to Multiple lot property owners to be mailed pending postage funds.

FLOOD RISK REDUCTION PROJECTS (FRRP)

FRRP // USACE/CVFPB PROJECTS

American River Watershed Project – WRDA 2016

- Draft Project Partnership Agreement (PPA) is with the USACE South Pacific Division Counsel for final review before it returns to the Board of final approval at the October meeting.

Folsom Dam Modifications Joint Federal Project (JFP)

- USACE has awarded a contract to complete many of the project punch-list items.

Folsom Dam Raise Project

- USACE Engineering Design (PED) of dikes #1-6 is underway.
- USACE Engineering Design (PED) of dikes #7 & 8, Left Wing Dam and Right Wing Dam, is underway.
- The Project Partnership Agreement (PPA) with USACE and local sponsor (SAFCA) is being reviewed by the USACE South Pacific Division Counsel.

Marysville Ring Levee Improvement Project

- Construction of Phase 2A-North slurry wall is complete and levee rebuild is in progress with completion scheduled for September 2018.

FRRP // USACE/CVFPB STUDIES

Lower San Joaquin River Feasibility Study (LSJRFS)

- The Chief's Report was signed by the Chief of Engineers on July 31, 2018.
- The Record of Decision is still in process and waiting for approval.
- The Design Agreement (DA) between USACE, CVFPB and the local sponsor SJAFCA is being processed for review in the USACE Sacramento District (SPK) office. Once the USACE receives the self-certification of financial Capability signed by the CVFPB, the USACE SPK will then submit the DA to the USACE San Francisco Division for review.

FRRP // URBAN FLOOD RISK REDUCTION PROGRAM (UFRR)

TRLIA – 200 Year Goldfields Levee (UFRR)

- TRLIA is nearing completion of a Supplemental Environmental Impact Report and anticipates circulation of the document for public review in the late September to early October time-frame.

FLOOD SYSTEM OPERATIONS & MAINTENANCE (FSO&M)

Flood Maintenance Office (FMO) is responsible for two areas of 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, 02, 04, 05, 07, 09, 12, 13, 16, & 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 in 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*
- *Small sediment removal*
- *Pumping plant, weir, outfall gates, and bridge operation, maintenance, and repair*
- *Pipe/Culvert repair*

FMO is in the process of developing a new program, Flood Maintenance Assistance

Program (FMAP), with annual funding to increase the level of maintenance in SMAs and support Local Maintaining Agencies (LMAs), including MAs, to do the same.

SMA Activities

Sacramento Yard

- Cache Creek Channel: 60 acres of vegetation Mowing (in progress).
- Cache Creek Levees: 50 miles of road grading (in progress).
- Cache Creek Levees: 23 miles of vegetation burning (in progress).
- Cache Creek Levees: 21 miles of vegetation spot spraying (completed).
- Cache Creek Levees: 21 miles of vegetation dragging (completed).
- Knights Landing Outfall Gates (KLOG): 10 CY of debris removal (completed).
- Knights Landing Outfall Gates (KLOG): FMO raised the operating water surface elevation from 25.5 feet to 26.5 on August 27. This was a request from DES to re-operate KLOG and work with local Reclamation Districts and local landowners to increase flows from the Colusa Basin into the Yolo Bypass in late August through mid to late September. The goal of the management action is to enhance both the quantity and quality of food for Delta Smelt in both the North Delta and lower Estuary. This will be achieved by achieving a target flow of 27,000 acre-ft. over a 4-week period. FMO will maintain a higher water surface elevation at KLOG while avoiding flooding landowners on the Colusa Basin Drain.
- Putah Creek: Vegetation mowing (complete).
- Sacramento Bypass Levees: 1.79 miles of vegetation mowing (in progress).
- Sacramento Bypass Channel: 4 CY of debris removed (completed).
- Sacramento Weir: Structure maintenance (in progress).
- West Yolo Bypass Units 1-4: 2.96 miles of vegetation mowing (complete).
- West Yolo Bypass Units 1-4: Vegetation spot spraying (in progress).
- Willow Slough Bypass: Erosion repairs permitted under SERP (complete).

Sutter Yard

- Big Chico Creek – 30 CY of debris removal (completed).
- East Levee Sacramento River – 2 miles of vegetation spot spraying (in progress).
- East Levee Sutter Bypass – Rodent depredating (in progress).
- East Levee Sutter Bypass – 20 miles of vegetation mowing (in progress).
- Tisdale Bypass – Vegetation spot spraying (in progress).
- Tisdale Bypass – Rodent depredating (in progress).
- Wadsworth Canal – 3 miles of vegetation mowing (in progress).
- Wadsworth Canal – Rodent depredating (in progress).
- SERP - Wadsworth Canal – The first two of five erosion repairs on Wadsworth Canal were completed August 2, 2018.
- McClatchy Road Crossing – The pipe has deteriorated causing erosion of the county roadway. Emergency permitting is underway. The pipe is scheduled to be replaced with a box culvert the week of September 10, 2018.

MA Activities

MA01

- 16 miles of vegetation burning (completed).

MA03

- 4 miles of vegetation spot spraying (in progress).
- Rodent depreddating (in progress).

MA04

- No O&M activity in the month of August 2018.

MA05

- 33.42 miles of vegetation mowing (in progress).

MA07

- 12.07 miles of vegetation mowing (complete).

MA09

- 19.6 miles of vegetation cutting and limbing (in progress).
- Vegetation masticating (in progress).
- Vegetation mowing (in progress).
- SERP erosion repair (in progress).

MA12

- No O&M activity in the month of August 2018.

MA13

- 41.97 miles of road grading (in progress).
- 35 miles of vegetation disking (complete).
- Spot spraying (in progress).

MA16

- 4.09 miles of vegetation spot spraying (completed).

MA17

- No O&M activity in the month of August 2018.

Technical Support to SMAs and MAs

- See Studies and Evaluations/Channel Evaluations.

Environmental Support to SMAs and MAs

- Surveys for nesting birds occurred before commencement of maintenance activities.
- Biological monitoring of small erosion repair (SERP) sites was conducted on Wadsworth Canal, MA09, and Willow Slough Bypass.

Flood Maintenance Assistance Program (FMAP)

FMO is working with CVFPB and LMAs to develop a program that will meet the intent of legislature and the needs of LMAs. At a minimum, the program will require execution of a new OMRR&R agreement with CVFPB and compliance with various flood reporting, such as AB 156.

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 (ROW)*

Channel Evaluation

Mercury Characterization Studies (Cache Creek Settling Basin)

- Staff continue to meet 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.
- Staff have received the final trap efficiency modeling report prepared by UCD. This report represents the final deliverable on the trap efficiency modeling and will be summarized in a report to the CVRWQCB in October 2019 along with updates on Basin feasibility studies conducted by others. Sediment and mercury load estimates are to be provided by the USGS.

Cherokee Canal Evaluation

- Staff is reviewing as-built drawings in order to simulate the as-built channel geometry and estimate the design condition water surface elevation.

Sacramento Area Streams Survey

- Staff is finalizing the partnering agreement with DOE's Geodetic Branch to perform aerial LiDAR surveys of eight Sacramento area streams this fall: Willow Slough Bypass, Cache Creek, Knights Landing Ridge Cut, Natomas Cross Canal, East Side Canal, Linda Creek, Arcade Creek, and NEMDC.

Levee Evaluation

Pipe/Culvert Evaluation

- Phase 1 video inspections:
 - 147 of 321 pipes passing through levees in areas of DWR "O&M" responsibility have been video inspected by DWR.

- 32 DWR directed funding agreements have been executed. The LMAs are in the process of implementing the DMP Phase-1 pipe evaluations work.
- Hydro vacuum/flushing followed by video inspection scheduled to continue in MA05, MA07, and MA16 through October 2018.
- AECOM is continuing with electro-magnetic studies for missing pipes. The pipes are in both the participating and non-participating LMAs.

Levee Tree Assessment

- MA04: During this pilot assessment, 646 trees were surveyed. There were 172 trees flagged for monitoring. Of those trees, 25 trees will be more closely reviewed, and management actions will be developed and prioritized.
- MA09: Assessment has begun and will continue through 2018.

Encroachments

- FMO is coordinating with HAFOO, CDEC, FPO, and CVFPB staff to prepare a comprehensive list of encroachments in SMAs and MAs using the information and data from cooperating partners listed above. This information is being compared to the most recent USACE Periodic Inspection report for accuracy, completeness, and redundancy. The objective is to prepare a complete list of encroachments prioritized as “emergency, critical, serious, or monitor status” and then to coordinate with the FMO Yard staff, CVFPB, DWR Legal, and DOE Geodetics, and Real Estate staff for planned abandonment, mitigation, repair, and/or removal. The first MA draft list, for MA04, has been completed, and is under review and field confirmation.

O&M Right of Way (ROW)

- FMO will continue to coordinate with DOE Geodetics to secure Resource level data for all SPFC facilities, and Survey level data for all SMA and MA areas.

Structural Evaluation

Tisdale Weir

- On August 28, 2018, a task order for ESA environmental and engineering support was executed. DWR recommended the need to include in the plan 50 years of maintenance permit coverage for the fish passage improvement components.
- On September 14, 2018, FMO staff will meet with structural engineers from HDR and ESA at Tisdale Weir to discuss structural integrity and modifications for fish passage.

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

- Construction began on August 1, 2018 on the final nine critical repair sites identified for state rehabilitation. These repairs are anticipated to be completed by November 2018.

- Construction is anticipated for Fall 2019 on previously identified serious sites, 38 of which are in design and permitting stages.

Levee Rehab

Flood System Repair Program (FSRP)

- DWR is completing conducting LMA outreach and field reconnaissance to prioritize eligible repairs and continue to enter into project agreements with the remaining program funding. Reclamation Districts are asked to report their high priority sites as part of this reconnaissance.
- RD-787 Project Modification – Director approved the increased scope and cost of the FSRP project managed by RD-108. RD-108 needs the funding to complete the project this year. Amendment approval is being finalized.

Pipe Rehab

- Cured-In-Place Pipe (CIPP) contract for pipe rehabilitation has been awarded to Michels Pipeline Construction, Inc.
- FMO would like to schedule the rehabilitation work in Putah Creek and Willow Slough in the Davis areas, but all the pipes have Automatic Board Orders (ABOs). ABOs were “permits” issued by the Central Valley Flood Protection Board, where the Board assigned “responsibility” for features to the adjacent land owner, without the landowner taking any action. For the video evaluation of the pipes, CVFPB letters either received no response, or a response that the owner was not aware of the pipe/did not intend to do anything with it. Because ABOs are effectively Board issued “permits”, although they are questionably enforceable, the CIPP process may have to wait until adequate clearance has been provided to ensure State funding is not being spent on “private property”. FMO staff believes these pipes/culverts are SPFC facilities, owned by the State, not encroachments.

Channel Rehab

Elder Creek Channel Rehab

- Year 2 of project activities began in August 2018.

Structural Rehab

Butte Slough Outfall Gate (BSOG) Rehab

- DWR is continuing to engage with State and federal regulatory agency staff regarding potential modifications to the BSOG rehabilitation design to benefit special status fish species.
- Design plans, environmental documents, and data regarding operations of BSOG were sent to CDFW and NMFS. DWR is awaiting recommendations from those agencies

Tisdale Weir

- After the conceptual design is complete, design activities will be initiated. The conceptual design is being completed with both technical and environmental input from FMO, Sutter Yard, and all resource agencies.

Collecting Canal Bridge CC-2 and CC-4

- Geotechnical soil results to support design of the new CC-4 bridge are scheduled for receipt in early September 2018.

Knights Landing Outfall Gates (KLOG) Fish Barrier

- Previous fish exclusion barrier became inoperable and was removed in fall 2016.
- FMO is moving forward to identify the appropriate design and operational needs for replacing the fish exclusion barrier

Zamora Extensometer

- Sacramento Maintenance Yard is rebuilding an extensometer hut in Zamora for the Groundwater Supply and Special Studies Sections. This is extra work outside of FMO responsibility.

Yard Rehab

Sacramento Yard Improvements

- As of August 27, 2018, contractor has replaced and backfilled most of the storm drain system for the site rehabilitation project. The contractor is scheduled to complete the rehabilitation work by November 2018. On September 6, 2018, roof replacement is scheduled for completion.

ENVIRONMENTAL INITIATIVE

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)

- EPOM EIR was completed in January 2018. FMO is working on the implementation of the mitigation monitoring and reporting program. FMO is also considering other permits needed to keep State operations and maintenance activities in environmental compliance (e.g., California Endangered Species Act, Endangered Species Act, Clean Water Act, Porter-Cologne Act, etc.)

Routine Maintenance Agreement (RMA) under FCG 1600

On July 17, 2018, CDFW Region 2 staff provided a third draft of the Lake and Streambed Alteration Agreement (LSAA/RMA) for FMO maintenance of the Sacramento River Flood Control Project. On August 6, 2018, FMO staff provided CDFW staff comments and suggested edits on the third draft of the RMA. On August 31, 2018, CDFW provided a fourth draft of the RMA to FMO that addressed comments and suggested edits. FMO staff have reviewed the fourth draft RMA and provided final comments to CDFW on September 10, 2018.

O&M Habitat Conservation Plan (HCP)

FMO has begun development of an HCP for State O&M activities covering the giant garter snake and valley elderberry longhorn beetle. FMO will coordinate with U.S. Fish and Wildlife Service and CDFW.

Advance Mitigation

Environmental Uplift Projects – An upcoming meeting with USFWS, NMFS, CDFW, and CVFPB will focus on environmental uplift projects and opportunities in the flood system that FMO and the agencies can work on together.

Small Erosion Repair Program (SERP)

FMO is investigating how much effort is needed to reauthorize the SERP permits. Also investigating the interest of the permitting agencies to reauthorize the SERP permits.

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)

- USACE will construct 12 sites this fall, with a potential for 4 more pending contracting issues, and 17 more sites in 2019. DWR and the CVFPB are working closely with USACE to manage the State's interest in these projects.

Sacramento River Bank Protection (Sac Bank)

- Nothing of significance to report for August 2018.