

**REPORT OF ACTIVITIES
OF THE
DEPARTMENT OF WATER RESOURCES**

By

**Keith E. Swanson, Chief,
Division of Flood Management
Department of Water Resources
California Natural Resources Agency
State of California***

(INTENTIONALLY LEFT BLANK)

Table of Contents

FLOOD EMERGENCY RESPONSE (FER)	7
RESERVOIR OPERATIONS & RIVER FORECASTING	9
FLOOD MANAGEMENT PLANNING (FMP)	10
CENTRAL VALLEY FLOOD MANAGEMENT PLANNING (CVFMP)	10
2017 Central Valley Flood Protection Program	10
2017 Central Valley Flood Protection Plan Supplemental Program EIR.....	10
2016 State Plan of Flood Control Descriptive Document Update	11
Basin-wide Feasibility Studies.....	11
Basin-Wide Feasibility Study Atlases	11
Regional Flood Management Planning (RFMP) Phase 2.....	11
Public Engagement	11
CONSERVATION STRATEGY	12
FLOODPLAIN RISK MANAGEMENT (FRM).....	12
CALIFORNIA FLOODPLAIN RISK MANAGEMENT (CFRM)	12
Floodplain Management Assistance.....	13
STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING (SIFMP).....	13
FLOOD RISK REDUCTION PROJECTS.....	14
DELTA LEVEE SYSTEM INTEGRITY (DLSI)	14
USACE/CVFPB PROJECTS.....	15
American River Common Features (ARCF) Project.....	15
American River Watershed – Natomas Basin Project	15
Folsom Dam Modifications Joint Federal Project (JFP)	15
Folsom Dam Raise Project	16
Lake Kaweah Enlargement Project (Terminus Dam, Kaweah River Project).....	16
Marysville Ring Levee Improvement Project.....	17
South Sacramento County Streams Project.....	17
USACE/CVFPB STUDIES.....	17
American River Common Features (ARCF) General Reevaluation Report (GRR)	17
Central Valley Integrated Flood Management Study (CVIFMS)	18
Cache Creek Settling Basin Project GRR	18
Lower San Joaquin River Feasibility Study (LSJRFS).....	18

Merced County Streams Project – Bear Creek GRR.....	18
Sutter Basin Feasibility Study.....	18
Sacramento River GRR	19
West Sacramento Project GRR	19
Woodland/Lower Cache Creek Feasibility Study.....	19
Yuba River Basin Project GRR	19
URBAN FLOOD RISK REDUCTION PROGRAM (UFRR).....	19
Knights Landing Levee Repair Project (EIP)	20
Lathrop Study and Preliminary Design (UFRR)	20
Reclamation District 17 (RD-17) – 100-Year Levee Seepage Area Project (EIP).....	20
Sacramento Area Flood Control Agency (SAFCA) – Levee Accreditation Project (UFRR).....	20
SAFCA – Natomas Cross Canal Project (EIP)	20
SAFCA – Sacramento River East Levee Project (EIP).....	20
San Joaquin Area Flood Control Agency (SJAFCA) – Smith Canal Closure Structure Project (EIP & UFRR).....	21
Sutter Butte Flood Control Agency (SBFCA) – Feather River West Levee Project (FRWLP) (EIP & UFRR).....	21
Three Rivers Levee Improvement Authority (TRLIA) – 200-year Goldfields Levee Project (UFRR)	21
TRLIA – Feather River Levee Improvement Project (EIP).....	21
TRLIA – Upper Yuba River Levee Improvement Project (EIP).....	21
West Sacramento Area Flood Control Agency (WSAFCA) – Design (EIP).....	21
West Sacramento Area Flood Control Agency (WSAFCA) – Construction (EIP & UFRR).....	22
Woodland Study and Preliminary Design (UFRR).....	22
FLOOD CORRIDOR PROGRAM (FCP)	22
LOCAL LEVEE ASSISTANCE PROGRAM (LLAP).....	22
YUBA-FEATHER FLOOD PROTECTION PROGRAM	22
SAN JOAQUIN RIVER RESTORATION PROJECT (SJRRP).....	23
FLOOD SYSTEM OPERATIONS AND MAINTENANCE (FSO&M).....	23
CHANNEL EVALUATION AND REHABILITATION	23
INSPECTION AND EVALUATION:.....	24
Cache Creek and Cache Creek Settling Basin Hydraulic Model	24
Feather River Hydraulic Model	24

Llano Seco Riparian Sanctuary (Butte Basin 2-D Model)	24
ROUTINE OPERATIONS AND MAINTENANCE:	25
NON-ROUTINE ACTIVITIES:	26
FLOOD CONTROL FACILITIES EVALUATION AND REHABILITATION (FCFER)	26
INSPECTION AND EVALUATION:	26
ROUTINE OPERATIONS AND MAINTENANCE:	26
NON-ROUTINE PROJECTS:	26
Collecting Canal Bridge CC-2 and CC-4 Repair	26
Bryte Yard Groundwater Investigation	27
Completion Contract	27
ROUTINE OPERATIONS AND MAINTENANCE:	27
NON-ROUTINE PROJECTS:	29
FLOOD SYSTEM EVALUATION AND REHABILITATION (FSER)	29
Lower Feather River Corridor Management Plan	29
Small Erosion Repair Program (SERP)	29
LEVEE REPAIRS	30
Flood System Repair Project (FSRP)	30
Sacramento River Bank Protection Project (SRBPP)	30
Federal Public Law 84-99 Emergency Repair Project (PL 84-99)	30

(INTENTIONALLY LEFT BLANK)

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 February 29, statewide hydrologic conditions were as follows: precipitation, 100 percent of average to date; snow water content, 90 percent of average to date (80 percent of the April 1 average); runoff, 85 percent of average to date; and reservoir storage, 70 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2016, observed through February 29, 2016 was about 6.7 million acre-feet (MAF), which is about 82 percent of average. In comparison to Water Year 2015, the observed Sacramento River Region unimpaired runoff through February 28, 2015 was about 6.3 MAF, or about 77 percent of average.

On February 29, the Northern Sierra 8-Station Precipitation Index Water Year total was 35.5 inches, which is about 102 percent of the seasonal average to date and 71 percent of an average water year (50.0 inches). During February, the total precipitation for the 8-Stations was 2.7 inches, or about 34 percent of average for the month. Last year on February 28, the Water Year 2015 seasonal total for the 8-Stations was 30.6 inches, or about 88 percent of average.

On February 29, the San Joaquin 5-Station Precipitation Index Water Year total was 27.1 inches, which is about 98 percent of the seasonal average to date and 66 percent of an average water

Report of Activities of the Department of Water Resources

April 22, 2016

Page 8

year (40.8 inches). During February, the total precipitation for the 5-Stations was 1.4 inches or about 20 percent of average for the month. Last year on February 28, the Water Year 2015 seasonal total for the 5-Stations was 13.2 inches, or about 48 percent of average.

Daily Precipitation (in inches) for Selected Stations as of 02/29/2016					
Station	October 1 to Date 2015-2016	% Average	Season to Date 2014-2015	% Average	% Average Oct 1 – Sep 30
Mount Shasta	24.61	82	29.42	99	56
Eureka	33.64	120	24.18	86	83
Redding	23.25	96	19.93	82	67
South Lake Tahoe	13.73	104	7.94	60	67
Sacramento Executive Airport	9.68	72	13.23	99	52
Santa Rosa (Sonoma Co AP)	18.64	69	20.72	76	51
San Francisco	14.53	82	15.92	89	61
Stockton	9.88	99	9.28	93	70
Yosemite	24.86	95	10.96	42	66
Monterey	15.46	136	13.01	114	96
Paso Robles	5.36	60	7.68	85	42
Fresno	9.94	129	4.53	59	86
Bakersfield	3.46	79	4.11	94	53
Death Valley	1.28	88	1.05	72	54
Los Angeles	4.53	41	6.40	58	30
Riverside	3.90	44	3.61	41	31
Palm Springs	2.43	63	1.24	32	42
San Diego	6.08	83	5.48	74	59

Key Reservoir Storage (1,000 AF) as of 02/29/2016								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	854	1,818	47	2,448	35	---	1,594
Shasta Lake	Sacramento	2,766	3,331	83	4,552	61	-1,225	1,786
Lake Oroville	Feather	1,865	2,469	76	3,538	53	-1,161	1,673
New Bullards Bar Res	Yuba	685	627	109	966	71	-111	281
Folsom Lake	American	606	544	111	977	62	-24	371
New Melones Res	Stanislaus	459	1,469	31	2,400	19	-1,511	1,961
Don Pedro Res	Tuolumne	944	1,442	65	2,030	47	-746	1,086
Lake McClure	Merced	184	534	34	1,025	18	-491	841
Millerton Lake	San Joaquin	268	342	78	520	51	-168	252
Pine Flat Res	Kings	269	531	51	1,000	27	-518	731
Isabella	Kern	43	185	23	568	8	-207	525
San Luis Res	(Offstream)	888	1,740	51	2,041	44	---	1,151

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for April 2016, issued March 17, 2016, suggests above normal precipitation for almost all of California, except the southern third of the state and the extreme northwest coast where normal precipitation is indicated.

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.

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.

The Spring Inspection started March 1 and is ongoing.

Staff participated in presentations led by California Office of Emergency Services (CalOES) which were held at 10 Counties including the Delta Region and Sacramento River Valley. These presentations were designed to inform and engage the local agencies in the planning process as CalOES develops its Northern California Catastrophic Flood Plan.

Staff provided a presentation to the Central Valley Flood Protection Board on the Emergency Response Grant Program. Several local agency representatives participated in the presentation to share the products which have been developed through the Program.

Statewide Flood Emergency Response Grants - Round 1

Staff continued to manage the 14 executed grant contracts with local agencies to improve their flood emergency response capabilities. Of the \$5 million awarded, approximately \$2.6 million has been invoiced for by the grantees. Staff presented on the Flood Emergency Response Grants at the Central Valley Flood Protection Board meeting on March 25.

Emergency Response Facilities – Facility Improvement Projects

A contractor has been awarded for Phase I of the Facility Improvement Project. The contract award was given to Asta Construction for approximately \$5m of improvement work at DWR's facilities on Airport Road, Rio Vista and South Webber Ave, Stockton. These improvements consist of standard civil improvements, road and service improvements, relocation of rock

stockpiles, and the construction of a new storage warehouse. Construction will begin at Rio Vista on April 12, 2016, and in Stockton on April 25, 2016.

Phase II of the Facility Improvement Project is scheduled for fall of 2016. All necessary mitigation has been completed and all required state and federal regulatory permits have been acquired as of March 2016.

Staff attended meetings in Butte, Colusa, Contra Costa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba to support the Governor's Office of Emergency Services informative briefings to counties on the Northern California Catastrophic Flood Response Plan.

Statewide Flood Emergency Response Grants - Round 2

A total of \$5 million was awarded in October 2015, to 20 local agencies to improve their flood emergency response capabilities through various project components such as flood safety plans, stream gage upgrades, flood emergency response exercises and training, and flood fight materials. Staff is working with local grantees to develop 20 grant contracts for the second round of Statewide Flood Emergency Response Grants.

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

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). As recommended in the 2012 CVFPP, this program is currently implementing major planning efforts: locally led Regional Flood Management Planning which is working with more than 180 local entities to prepare regional flood management plans; state led Basin-wide Feasibility Studies (BWFS); the Central Valley Flood System Conservation Strategy (CS); and the CVFPP Financing Plan. Each of these planning efforts will inform the 2017 update of the CVFPP, the first five-year update as required by the California Water Code (CWC).

2017 Central Valley Flood Protection Program

No new information this month.

2017 Central Valley Flood Protection Plan Supplemental Program EIR

Notice of Preparation for a Supplemental Program Environmental Impact Report (EIR) associated with the 2017 CVFPP Update was filed with the State Clearinghouse on March 18, beginning a 30-day comment period. Assembly Bill 52 tribal notification letters were also sent out on March 18. A public scoping meeting will be conducted April 8 at Sacramento City Hall.

2016 State Plan of Flood Control Descriptive Document Update

DWR has developed an initial draft high-level outline for an update to the 2010 SPFC Descriptive Document and is in the process of collecting and reviewing associated reference documentation to draft the update.

2017 Flood Control System Status Report Update

DWR – Central Valley Flood Planning Office (CVFPO) staff are coordinating and managing the update to the Flood Control System Status Report (FCSSR). The update will incorporate information with respect to flood inspections of channels, levees, pump stations, and weirs, as well as vegetation and erosion. Interdepartmental coordination is ongoing with multiple branches within DFM contributing information. CVFPO has also engaged the CVFPB and USACE, as needed, during the update process.

Basin-wide Feasibility Studies

DWR planned released a stakeholder review draft Sacramento River BWFS on April 1, 2016. Comment period will close May 6 and a revised draft is expected in July 2016.

The San Joaquin BWFS is undergoing communications and engagement with stakeholders on its findings and tentative recommendations, including a planned Board-convened special workshop on May 13 at San Luis National Wildlife Refuge. A stakeholder review draft San Joaquin River BWFS is expected in late summer 2016.

Basin-Wide Feasibility Study Atlases

No new information this month.

Regional Flood Management Planning (RFMP) Phase 2

No new information this month.

Small Communities Flood Risk Reduction Program

The draft Guidelines and Proposal Solicitation Package for the Small Communities Flood Risk Reduction (SCFRR) Program are in the process of being updated based on comments received in the comment period, which concluded on December 28, 2015. DWR expects to finalize the documents and start the application period in May.

Public Engagement

CVFPO staff makes monthly presentations on the progress of development of the 2017 CVFPP at each monthly CVFPB meeting. The presentation can be viewed via archived video available at the CVFPB website CVFPB.ca.gov. Past presentations can be found on the CVFMP website at www.water.ca.gov/cvfmp/.

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 CS 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.

Conservation Strategy Document

No new information this month.

Advanced Mitigation Projects

No new information this month.

Levee Vegetation Research

With funding support from DWR, the California Levee Vegetation Research Program (CLVRP) completed its report "Synthesis of Levee Vegetation Research Results". Following a 2007 levee vegetation symposium, considerable research on levee vegetation was conducted by the CLVRP, the U.S. Army Engineer Research Development Center (ERDC), and European scientists. Much of this work was reported at a 2012 symposium. In consultation with scientists studying various aspects of levee vegetation effects, the CLVRP has completed a synthesis of key findings of selected research, with emphasis on recent findings from 2007 to 2013.

For the most recent CLVRP research publications related to levee vegetation and descriptions of current projects and research, as well as proceedings and details from past levee vegetation symposia, see the CLVRP website at: <http://www.water.ca.gov/floodsafe/leveeveg/>.

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.

CALIFORNIA FLOODPLAIN RISK MANAGEMENT (CFRM)

The CFRM works with individuals, communities, and professionals to reduce the risk of flooding. It is a comprehensive integrated program that preserves and enhances the natural and beneficial functions of floodplains, and identifies opportunities to minimize the impacts of flooding. The goal of CFRM is to reduce the frequency and severity of flood loss, loss of life,

damage to property, and damage to the natural resources of floodplains. One of the basic foundations of CFRM is the identification and delineation of flood hazard areas within the state. This program promotes awareness of flood risks through risk assessment and risk mapping; the community assistance program; Flood Risk Notification (FRN); floodplain management mitigation planning; and mitigation cost recovery.

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.

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING (SIFMP)

*Statewide Integrated Flood Management Planning (SIFMP) has identified flood risks facing Californians and proposed mitigation measures to manage the risks. SIFMP presented recommendations to improve flood management in a comprehensive report titled **California's Flood Future: Recommendations for Managing the State's Flood Risk**. The report identified that more than 7 million Californians, or one in five, live within a 500-year level of flood risk floodplain, and approximately \$580 billion in assets (crops, structures, and public infrastructure) are exposed to flooding. It was produced working jointly with the 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.*

The SIFMP program is currently working to further define ways to implement the *California's Flood Future* recommendations. A primary focus is on development of a "water management effectiveness framework", which is the foundation of providing for investment for flood and water management. This framework will provide for a long-term, outcome-based approach to flood risk management throughout California within the context of overall water management investment. In addition, the program has wrapped up an expanded information gathering effort, in which approximately 240 flood and water management agencies were interviewed. A draft report titled *Investing in California's Flood Future* is being developed that will describe the state's investment priorities and finance options necessary to support the programs and projects that help improve flood management and reduce residual flood risk using an outcome-based approach. This report supports *Actions 8 and 10* of the *California Water Action Plan*.

FLOOD RISK REDUCTION PROJECTS

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 2013-2014

- On October 13, 2013, the Board approved the FY 2013-14 funding plan for \$12 million.
- Staff has reviewed 62 claims for eligible reimbursements. Fifty nine claims for \$5.6 million have been processed for payment. Three claims need final CDFW approval before payment can be made.

Subventions Program FY 2014-15

- On October 24, 2014, the Board approved the FY 2014-15 funding plan for \$12 million.
- Sixty-eight final claims for work completed between July 1, 2014 and June 30, 2015 have been received by DWR for review, inspection and reimbursement.
 - Levee inspections complete.
 - Final claims are being processed for reimbursement.

Subventions Program FY 2015-16

- The Department received 71 applications for participation in the FY 2015-16 Delta Levees Subventions Program.
- On October 23, 2015, the CVFPB approved \$12 million from Proposition 1E funds for the FY 2015-16 Subventions Program.
- Work Agreements for the FY 2015-16 Subventions Program are being executed upon receipt from the LLMA.

USACE/CVFPB PROJECTS

The Central Valley Flood Protection Board (CVFPB) participates with the USACE to ensure that state flood management needs and mandates are met, and provides required non-federal cost-share funds and technical assistance to repair or upgrade the Central Valley’s flood management systems. These congressionally authorized State Plan of Flood Control (SPFC) projects are being constructed to improve flood protection for urban or urbanizing areas to a 200-year level of flood protection; 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 Common Features (ARCF) Project

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

- WRDA 96/99 Project completion Ribbon Cutting Ceremony, which Congresswoman Matsui will attend, is scheduled for April 8, 2016. USACE public affairs office sent the invitations on March 24, 2016. The invitees include Gary Bardini, Keith Swanson, Bill Edger, Leslie Gallagher, and Maggie Macias. The ceremony is being held at the levee adjacent to the University Park.

American River Watershed – Natomas Basin Project

The Natomas Basin Project was approved by President Obama in the Water Resources Reform and Development Act in June 2014. 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.

- Comments on the Reach H Geotechnical Basis of Design Report and 60 percent plans, specifications, and cost estimates are due in April 2016.
- Reach D 60 percent design submittal is due in June 2016.
- USACE has decided this project is a new start and a Project Partnership Agreement (PPA) is needed. USACE indicated that the PPA must be signed by August 2016, to qualify for Federal Fiscal Year 2017 funding. A Local Project Partnership Agreement (LPPA), between CVFPB and the Sacramento Flood Control Agency (SAFCA), and a PPA between CVFPB, SAFCA, and USACE is being prepared for execution.

Folsom Dam Modifications Joint Federal Project (JFP)

The purpose of the JFP is to construct an auxiliary spillway at Folsom Dam that will work in conjunction with the existing spillways to help the Sacramento region achieve a 200-year level of flood protection. The estimated construction completion date is October 2017.

- Construction and Design – The project status as of March 1, 2016, is as follows:

Phases	Planning & Design	Construction
Preconstruction Engineering and Design	100%	N/A
Phase III – Control Structure	100%	99%
Phase IV – Approach Channel, Chute, & Stilling Basin	100%	89%
Phase V – Site Restoration	95%	8%

Project Overall	99%	92%
-----------------	-----	-----

- ✓ General: USACE presented an update on JFP project at the March 25, 2016, CVFPB meeting.
- ✓ Phase III: Granite is finalizing closeout items on the Control Structure.
- ✓ Phase IV: Kiewit continues work on the Upper Chute. Trestle bridge removed on March 8, 2016. Wet excavation of the Approach Channel is scheduled to start in April 2016.
- ✓ Phase V: Phase V Supplemental EA/EIR anticipated to be brought before the CVFPB for certification at the April 2016 Board meeting.

Folsom Dam Raise Project

The Folsom Dam Raise Project will provide flood damage reduction by increasing the reservoir storage capacity by 3.5 feet and performing structural modifications to the existing Folsom Dam tainter gates for operational safety.

- The Department of Water Resources (DWR) commented on the PPA and will coordinate with USACE to clearly define creditable costs and procedures before presenting to the Board for approval, tentatively scheduled for October 2016.
- USACE submitted the 95 percent design and continued the technical coordination meetings with the non-Federal sponsors regarding the proposed redesign of the trunnion assembly and anchorage system; comments on the 95 percent design is due on April 11, 2016. The estimated cost for the gates modification is \$51.6 million. The total project cost estimate for the gates modification and the dike raises is \$229 million.
- USACE proposes to place top seals over only the emergency tainter gates, which is a change from their design in June 2014, which included top seals placement over the service tainter gates as well.
- USACE is expected to complete the Final Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) in October 2016 and complete National Environmental Policy Act (NEPA) review in November 2016. The Board may choose to consider approval of the Final SEIS/EIR at the October 2016 meeting to complete the CEQA process.
- USACE plans to award the contract for the Gates Modification Package in May 2017 and the Work Package 1 contract in September 2017.
- USACE is currently conducting an economic re-evaluation of the Folsom Dam Raise project to update project costs and benefits due to complete by May 2016.

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

The Lake Kaweah Enlargement Project was completed in 2006, and the remaining administrative, financial, and turnover work is planned to be complete by September 2015.

- The Integral Determination Report allowing section 221 credit to the Kaweah Delta Water Conservation District was approved on March 24, 2016 by the Assistant Secretary of the Army (ASA). USACE will amend the Project Cooperation Agreement (PCA) to incorporate the section 221 credit. The amendment process is anticipated to take about one year.

Marysville Ring Levee Improvement Project

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

- Phase 4A Construction – Construction is expected to start in May 2016.
- Phase 2A Construction – Plans and Specs are going through the USACE review process. Comments have been closed and the team is addressing them. DWR and the Marysville Levee District (MLD) are coordinating with the Union Pacific Railroad and the utility owners to finalize the real estate certification package, which is expected in April 2016.
- Phase 2C Plans and Specifications are at 90 percent level and were recently reviewed by DWR and MLD. Construction of this phase is planned for summer 2017.
- Phase 2B Design kicked off with an independent panel of experts review on March 28, 2015. Plans and specifications will be developed by an outside contracting firm at the direction of USACE.

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 an area to the south and east of the city of Sacramento.

- USACE is revising the take map based on inputs received from the stakeholders. Revised take letter submittal to DWR is due in early April 2016 to acquire O&M easements along the Morrison Creek alignment.
- Installation of gauge and data recording system in Pump Station 89 was completed in late February 2016.

USACE/CVFPB Studies

CVFPB 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 the facilities of the State Plan of Flood Control (SPFC); reduce the risk to life, infrastructure, and property; and reduce the state's liability. The following are USACE/CVFPB studies:

American River Common Features (ARCF) General Reevaluation Report (GRR)

The GRR will provide a 200-year level of flood protection for the Lower American River, downstream of the Folsom Dam, the Sacramento River (downstream of the Natomas Cross Canal), and the Natomas Cross Canal.

- The USACE Civil Works Review Board (approved the ARCF GRR on December 8, 2015. Any updates to the GRR will be provided to DWR before presenting to the Board for approval in April 2016.

- The Department of General Services approved the Contract Amendment #1 to increase total study costs to \$15.5 million; this Amendment was approved by the Board in October 2015.

Central Valley Integrated Flood Management Study (CVIFMS)

This Study will identify federal interest in the Sacramento River Basin by identifying opportunities to reduce flood risk and protect floodplain and environmental assets.

- An informational briefing on the recommendations included in the CVIFMS Watershed Plan was presented at the March Board meeting. The CVIFMS Watershed Plan is a federal companion document to the 2012CVFPP that establishes a partnership with USACE to allow necessary coordination of state flood risk management goals outlined in the CVFPP.

Cache Creek Settling Basin Project GRR

This settling basin was initially constructed in 1937 and modifications were completed in 1993. As a part of the federal authorization for the most recent 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.

Lower San Joaquin River Feasibility Study (LSJRFS)

The LSJRFS will evaluate feasible flood risk reduction alternatives focused in the Stockton, Lathrop and Manteca areas, 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.

- CFVPB Staff anticipates submitting a letter of Intent to USACE in support of the Merced County Streams Feasibility Study. The letter will show the Board's support and intent to participate in the Merced County Streams Feasibility Study.

Success Reservoir Project GRR

The Success Reservoir is a multi-purpose facility built to provide flood control and irrigation. The Success Reservoir is currently under evaluation for flood risk; USACE and the non-Federal sponsors intend to move forward with improvements which reduce the risk of the Dam and provide the multipurpose flood control and irrigation improvements.

- No new information this month.

Sutter Basin Feasibility Study

This multipurpose study will address levee improvement measures for existing levee systems protecting Yuba City and the surrounding communities in the Butte/Sutter basin, as well as environmental restoration and recreation opportunities.

- 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.

- The GRR is nearing the completion of the first milestone, the Alternative Milestone, where USACE management agrees on the proposed process for continuing analysis and evaluation of a focused array of alternatives. The Alternative Milestone completion is due at the end of April or the beginning of May 2016.

West Sacramento Project GRR

The GRR will evaluate flood risk reduction alternatives within the West Sacramento 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.

Woodland/Lower Cache Creek Feasibility Study

This study is a state, USACE, 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. The study will continue efforts, suspended in 2004, after significant local resistance to the USACE-selected flood barrier option alternative halted the study.

- 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.

- 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 and facilities of the SPFC. UFRR is based on competitively awarded grants 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 will repair 3.4 miles of levee along the left (east) bank of the Knights Landing Ridge Cut back 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 (UFRR)

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. This project is still under review for state funding from DWR.

- No new information this month.

SAFCA – Natomas Cross Canal Project (EIP)

This Natomas Levee Improvement Program project will install 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 will install 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 plans to complete components to element 12A (RM 67) along the Sacramento River and have the USACE complete the remaining work.

- No new information this month.

San Joaquin Area Flood Control Agency (SJAFC) – 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 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. FRWLP's highest priority segment is identified as Project Area C. DWR chose Project Area C for the first construction contract.

- 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 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 one of the largest setback levees west of the Mississippi River, and creates 1600 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 level of flood protection 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.

- No new information this month.

West Sacramento Area Flood Control Agency (WSAFCA) – Design (EIP)

Design agreement funds 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 for 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.

- The project team will be meeting with the Regional Water Quality Control Board on April 12, 2016 to make them aware of this project.

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. 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 project facilities, or improvement, construction, modification, relocation of flood control levees, weirs, or bypasses, including repair of critical bank and levee erosion.

- No new information this month.

YUBA-FEATHER FLOOD PROTECTION PROGRAM

The Yuba-Feather Flood Protection Program provides Proposition 13 financial assistance to local entities that can demonstrate nonstructural flood management projects that show a peak flood

flow reduction, flood stage reduction, and flood risk reduction in the Yuba, Feather River and Colusa Basin (including wildlife habitat enhancement and/or agricultural land preservation).

- No new information this month.

SAN JOAQUIN RIVER RESTORATION PROJECT (SJRRP)

The Division of Flood Management has created the SJRRP to assist the United States Bureau of Reclamation (USBR) in assessing flood risks associated with the San Joaquin River Restoration Program. The San Joaquin River Restoration Program is a comprehensive long-term effort to restore flows to the upper San Joaquin River and restore a self-sustaining Chinook salmon fishery while avoiding adverse water supply impacts. USBR, lead agency for the SJRRP, has initiated Interim releases from Friant Dam and is evaluating alternatives for releases and routing of restoration flows up to 4,500 cubic feet per second to support reintroduction of selected fish species into the San Joaquin River, as required by the Stipulation of Settlement (Settlement). DWR has offered technical and funding assistance to the program in recognition of the DWR's role in habitat restoration and flood management.

The purpose of the SJRRP is to assist the San Joaquin River Restoration Program in assessing the flood risk impacts of Restoration flows under this program due to seepage and stability, as well as identifying potential remedies to address increased flood risks under Restoration flows in coordination with the CVFPP.

- No new information this month.

FLOOD SYSTEM OPERATIONS AND MAINTENANCE (FSO&M)

FSO&M focuses on maintaining system features such as levees, hydraulic control structures, pumping plants, bridges, and channels to continue to achieve risk reduction benefits the system was designed to provide riverside communities, rural areas and the state. Local agencies and the state share responsibility for this work. LMAs operate and maintain a majority of the system through management of their individual levee systems, while the state is required to operate and maintain those portions of the State Plan of Flood Control (SPFC) identified in the California Water Code (CWC). Local agencies and the state work closely with the CVFPB, the USACE, and environmental resource agencies to ensure that operations and maintenance activities meet statutory requirements that promote public safety, environmental stewardship, and economic stability.

CHANNEL EVALUATION AND REHABILITATION

As part of the FSO&M mega program, the Channel Evaluation and Rehabilitation Program is responsible for operating, maintaining, and repairing SPFC channels identified in assurances to the federal government and defined in CWC Section 8361. DWR operates and maintains approximately 1,200 miles of SPFC channels of the Sacramento River Flood Control Project to ensure proper flood protection function and conveyance capacity.

*Proposition 1E funding is being used for extraordinary operations and maintenance activities, including SPFC channel evaluations, mercury characterization and control implementation, and channel conveyance capacity deficiency correction. Routine operations and maintenance requirements are **funded by the General Fund**.*

Specific Channel Evaluation and Rehabilitation Program activities include channel inspections and evaluations, as well as developing and utilizing hydraulic models to identify critical areas within channels requiring the removal of vegetation or sediment to maintain channel capacity and flood protection function.

Channel responsibilities also include those under the Central Valley Regional Water Quality Control Board's adopted Total Maximum Daily Loads (TMDLs) and Basin Plan Amendment, wherein DWR is assigned responsibility for monitoring, evaluating and reducing total mercury and methyl mercury loads passing through the Flood Control System and into the Yolo Bypass and the Delta. DWR is mandated to conduct characterization and control studies for activities including flood control improvements, modifications, and wetland mitigation work with the potential to impact methyl mercury concentrations in the Yolo Bypass and Delta.

The Channel Evaluation and Rehabilitation Program reports progress within the following components:

- *Inspection and Evaluation*
- *Routine Operations and Maintenance*
- *Non-Routine Projects*

INSPECTION AND EVALUATION:

Cache Creek and Cache Creek Settling Basin Hydraulic Model

Staff made minor modifications to interconnection of 1-D/2-D portion of the model and conducted several model runs to evaluate sensitivity to assumed channel roughness and mesh resolution.

Feather River Hydraulic Model

Staff requested and received LiDAR data for the Feather River area from CVFED and is processing that data to refine the existing model. An apparent anomaly in the LiDAR data for Honcut Creek was discovered and staff are working with CVFED to resolve the issue. Staff are continuing to work on model refinement for the Feather River.

Llano Seco Riparian Sanctuary (Butte Basin 2-D Model)

The Corp's Hydrologic Engineering Center officially released HEC-RAS 5.0, which includes 2-D capabilities, in early March. Initial versions of the Butte Basin 2-D Model were developed using the (March 2015) Beta version on the model. Staff provided support to the Central Valley Flood Planning Office to migrate the model to the official version. Unfortunately, several errors were identified in the 5.0 version that the Corp is working to correct. Staff returned to using the Beta

version until the official version is corrected and are working on calibrating the model with this version.

Mercury Characterization Studies

No new information this month.

Sacramento River (Colusa Weir)

Staff migrated the model to the official 5.0 version of the model. Staff is planning to use the model to evaluate a potential project of vegetation removal and possible channel modifications/sediment removal to improve flow over the weir.

Yuba River Hydraulic Model

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, 2014, and ended on October 31, 2015. 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.

The following activities were completed in the month of March:

- In Bear River, 0.3 acres of vegetation was sprayed, 0.3 acres were mowed, and 20 cubic yards of debris was removed.
- In Big Chico Creek, 70 cubic yards of debris was removed.
- In Colusa Bypass, 120 cubic yards of debris was removed.
- In Sutter Bypass east and west borrow pits, 80 cubic yards of debris was removed.
- In Elder Creek, 10 acres of vegetation was sprayed, 10 acres were mowed, and 10 acres of vegetation was cleared by hand.
- In Arcade Creek, 1 cubic yard of debris was removed.
- In Magpie Creek Diversion, 0.5 cubic yards of debris was removed.
- In Magpie Creek, 2 beavers were removed by USDA.
- In Natomas East Main Drain, 2 cubic yards of debris was removed, and 13 beavers were removed by USDA.

NON-ROUTINE ACTIVITIES:

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.

- No new information available for 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.

The following activities were completed in the month of March:

- All pumping plants were kept clear of debris during high water operations.
- The fence at Knights Landing Outfall Gate was repaired.

NON-ROUTINE PROJECTS:

Collecting Canal Bridge CC-2 and CC-4 Repair

No new information available for this month.

Bryte Yard Groundwater Investigation

The fourth groundwater sampling collection event to support a request to close the site under the low-risk underground storage tank closure policy has been completed. Upon receipt of the analytical data, a report requesting consideration for closure will be prepared. The report is scheduled for submittal to the Central Valley Water Quality Control Board by May 15, 2016.

Butte Slough Outfall Gates (BSOG)

Environmental staff is working with state and federal regulatory agencies to try and obtain long term operations and maintenance coverage for the proposed rehabilitation work. DWR Real Estate continues to work on access and right of entry agreements. Additional electrical updates are being incorporated into the design plans.

Completion Contract

This is a project to complete some items that were not included in the contracts for recent projects. The completion contract covers the Weir 2 project, Willow Slough project, Pumping Plant project, and Knights Landing Outfall Gates project. The contract was awarded to Valentine Construction with the notice to begin work on December 24. Construction is expected to commence in the summer of 2016.

LEEVE OPERATIONS AND MAINTENANCE COMPONENTS

The Levee Maintenance Program, like the Channel Maintenance Program, is generally organized around the continual and ongoing maintenance of specific levee structures in the Sacramento River Flood Control Project. Both the Sacramento and Sutter Yards have assigned responsibilities for specific levee reaches to provide performance-based levee operating and maintenance to help ensure the levee will perform satisfactorily during any high water flood event.

When a levee evaluation and inspection report indicates that a significant repair or rehabilitation is required, the design and construction will be turned over to the levee repair program and constructed as a capital outlay project under the flood risk reduction mega-program. Otherwise the three component activities are considered as "operations and maintenance".

The Levee Operation and Maintenance Program reports progress within the following components:

- *Routine Operations and Maintenance*
- *Non-Routine Projects*

ROUTINE OPERATIONS AND MAINTENANCE:

The Maintenance Yards' routine levee maintenance includes vegetation management through spraying, mowing, and trimming, maintaining levee geometry through dragging levee crown roads, dragging levee slopes, repairing minor erosion, and maintaining waterside and landside toe

roads where they exist, protecting levees from rodent damage and repairing damage that has occurred through FMO's Rodent Abatement/Damage Repair and Rehabilitation Program, and removing or remedying encroachments. Reporting on routine maintenance activities started on November 1, 2014, and ends on October 31, 2015. 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 March:

- At Cache Creek (21.63 miles), the following activities were completed:
 - Vegetation was burned along 3 miles,
 - Trees were trimmed along 14 miles,
 - Spot spraying of vegetation occurred along 4 miles,
 - Mile markers were repaired or replaced along 18 miles, and
 - Nine (9) gates were repaired.
- At the upper 2 miles of the East Yolo Bypass Levee the following activities were completed:
 - Trees were trimmed along 1 mile,
 - Spot spraying of vegetation occurred along 1 mile, and
 - Mile markers were repaired or replaced along 2 miles.
- At Maintenance Area (MA) 4 (3.4 miles), the following activities were completed:
 - Trees were trimmed along 2 miles,
 - Mile markers were repaired or replaced along 3 miles, and
 - One (1) gate was repaired or replaced.
- At MA 9 (19.61 miles), the following activities were completed:
 - Trees were trimmed along 4 miles,
 - Mile markers were repaired or replaced along 12 miles, and
 - Two (2) gates were repaired or replaced.
- At Putah Creek (16.9 miles), the following activities were completed:
 - Trees were trimmed along 1 mile, and
 - Mile markers were repaired or replaced along 2 miles.
- At the Sacramento Bypass (3.56 miles), the following activities were completed:
 - Vegetation was burned along 1 mile,
 - Mile markers were replaced along 2 miles, and
 - One (1) gate was repaired or replaced.
- At the West Yolo Bypass levees Units 1-4 (9.35 miles), the following activities were completed:
 - Pre-emergent was sprayed along 2 miles,
 - Trees were trimmed along 2 miles,
 - Spot spraying vegetation occurred along 2 miles,
 - Mile markers were replaced along 6 miles, and
 - Three (3) gates were repaired or replaced.

- At Willow Slough Bypass (12.82 miles), the following activities were completed:
 - Spot spraying vegetation occurred along 10 miles,
 - Two (2) erosion sites were repaired,
 - One (1) erosion repair was completed,
 - Mile markers were replaced along 2 miles, and
 - Three (3) gates were repaired or replaced.
- At the Colusa Bypass (4.58 miles), the following activity was completed,
 - Rodent baiting along 4.58 miles.
- At the East Levee of the Sacramento River (20.31 miles), the following activities were completed:
 - Rodent baiting along 12 miles, and
 - Several downed trees were removed.
- At the East Levee of the Sutter Bypass (22.37 miles), the following activity was completed:
 - Crown road grading along 3 miles.
- At MA 1 (17.12 miles), the following activity was completed:
 - Rodent baiting along 17.12 miles.
- At MA 12 (11.31 miles), the following activities were completed:
 - Pre-emergent was sprayed along 11.31 miles, and
 - Rodent baiting along 11.31 miles.
- At MA 13 (41.97 miles), the following activities were completed:
 - Pre-emergent was sprayed along 41.97 miles, and
 - Crown road grading occurred along 41.97 miles.

NON-ROUTINE PROJECTS:

No new information this month.

FLOOD SYSTEM EVALUATION AND REHABILITATION (FSER)

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

Lower Feather River Corridor Management Plan

No new information this month.

Small Erosion Repair Program (SERP)

No new information this month.

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)

As of March 2016, FSRP has completed four construction projects; one a proactive erosion repair in State Maintained Area ST008, and three all-weather access road repairs in RD 1500, RD 1600, and the Lower San Joaquin Levee District. The total cost of these projects was approximately \$4.3 million, which includes \$552,000 in local cost share. Additionally, FSRP has committed approximately \$35.8 million for all-weather access road improvements and levee repair projects to rural portions of the SPFC. This amount includes approximately \$3.7 million in local-share contributions. These committed projects are in various stages of permitting/design/construction. Projects supported with these funds include eight all-weather levee access road repair projects, seven critical erosion repair projects and one control structure repair project. FMO staff continues to develop work agreements to commit additional FSRP funding for these types of rural levee repair projects.

Sacramento River Bank Protection Project (SRBPP)

No new information this month.

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

No new information this month.