

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

**By**

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

---

\*Presented before the Central Valley Flood Protection Board on March 23, 2012

## **FUNCTIONAL AREA 1 FLOOD EMERGENCY RESPONSE**

*This functional area includes work to better prepare for, respond to, and recover from flood emergencies. A program for flood emergency response is a necessary part of flood management because California will always face flood emergencies, even when system improvements reduce the frequency of flooding. Program activities include inspection and assessment of flood projects' integrity; reservoir operations and river forecasting; flood data collection, management, and dissemination; precipitation and runoff forecasting; Delta flood preparedness, response, and recovery; and statewide flood emergency response functions.*

### **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.*

### **INSPECTIONS**

Inspectors continue to inspect Central Valley Flood Protection Board (CVFPB) Encroachment Permit projects for compliance with permit conditions. Spring levee inspections have begun with revised inspection criteria. It is anticipated that all levees will be inspected this season. Coordination with Levee Maintaining Agencies (LMAs), Central Valley Flood Protection Board (CVFPB) staff, and United States Army Corps of Engineers (USACE) staff is continuing regarding inspections, permits, and other topics. A presentation will be given at the CVFPB meeting this month regarding results from the 2011 Inspection Report and revisions to the inspection criteria.

### **FLOOD PROJECT INTEGRITY/VULNERABILITY ASSESSMENT**

#### **Levee Instrumentation Pilot Study**

Phase II of the project that included installation of the piezometers and data logger system is complete. A Draft Operations and Maintenance Manual along with as-built drawings are available. Data from the piezometers is being downloaded daily to ensure remote download capability of the system is functional.

#### **DWR Utility Crossing Inventory Program (UCIP)**

Utility Crossing Inventory Program continued to make progress by expanding the UCIP database with additional desk studies. The UCIP team is coordinating internally and working with the State Maintained LMAs to pilot test field survey procedures using a web-based reporting tool. This tool will allow LMAs to view the utility crossing inventory information (UCIPs desk study) online and allow them to record any utility crossing status updates.

## **FLOOD SYSTEM ANALYSIS**

The Flood System Analysis Section continues working on the development of a pre-season flood system vulnerability assessment tool that will utilize existing evaluation and inspection data being collected throughout by the Division to identify weak, deficient, or vulnerable reaches of levees and establish a consolidated reference of detailed information describing the vulnerability.

## **LOCAL MAINTAINING AGENCY ANNUAL REPORTING PROGRAM (CWC 9140-9141)**

2011 Local Maintaining Agency Annual Report is now finalized and ready to send to the Board. The Board will receive a presentation on the report along with the 2011 Annual Inspection on March 23 Board meeting.

A website has been launched to assist LMAs with their system documentation needs:

[http://cdec4gov.water.ca.gov/public\\_systems\\_docs.html](http://cdec4gov.water.ca.gov/public_systems_docs.html)

This website is designed to help LMAs, Agencies and Consultants with easy access to the documents related to the system. Levee logs, Assurance Agreements, O&M Manuals, as-Built Drawings are posted by LMAs. The site is not fully developed as we are still collecting documents. However, it reflects the most current versions of documents available to DWR and is subject to future updates and modifications as more information becomes available. The site was developed as part of the FloodSAFE FAXCT-5 cross coordination effort.

## **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.*

## **WATER CONDITIONS**

As of February 29, statewide hydrologic conditions were as follows: precipitation, 50 percent of average to date; runoff, 35 percent of average to date; snow water equivalent, 30 percent of average for the date (25 percent of the April 1 average); and reservoir storage, 105 percent of average for the date. Sacramento River Region unimpaired runoff observed through February 29, 2012 was about 3.0 million acre-feet (MAF), which is about 36 percent of average. For comparison, on February 28, 2011, the observed Sacramento River Region unimpaired runoff through that date was about 7.7 MAF, or about 95 percent of average.

Precipitation in February, for almost all of California, was below normal. On February 29, the Northern Sierra 8-Station Precipitation Index Water Year total was 17.5 inches, which is about 50 percent of the seasonal average to date and 35 percent of an average water year (50.0 inches). During February, the total precipitation for the 8-Stations was 3.0 inches, which is about 38 percent of the monthly average. Last year on February 28, the seasonal total for the 8-Stations was 42.5 inches, or about 122 percent of average for the date.

On February 29, the San Joaquin 5-Station Precipitation Index Water Year total was 12.5 inches, which is about 45 percent of the seasonal average to date and 31 percent of an average water year (40.8 inches). During February, the total precipitation for the 5-Stations was 2.4 inches, which is about 35 percent of the monthly average. Last year on February 28, the seasonal total for the 5-Stations to date was 41.9 inches, or about 152 percent of average for the date.

Selected Cities Precipitation Accumulation as of 02/29/2012 (National Weather Service Water Year: July through June)					
City	Jul 1 to Date 2011 - 2012 (in inches)	% Avg	Jul 1 to Date 2010 - 2011 (in inches)	% Avg	% Avg "Water Year" Jul 1 to Jun 30 2011- 2012
Eureka	21.06	72	26.46	91	52
Redding	13.57	54	21.87	87	39
Sacramento	5.70	42	14.45	105	31
San Francisco	7.14	40	18.17	101	30
Fresno	3.43	44	11.47	146	30
Bakersfield	2.04	46	8.14	182	32
Los Angeles	4.31	43	13.26	133	34
San Diego	6.16	81	10.51	139	60

Key Reservoir Storage (1,000 AF) as of 02/29/2012								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,960	1,851	106	2,448	80	---	488
Shasta Lake	Sacramento	3,169	3,370	94	4,552	70	-1,087	1,383
Lake Oroville	Feather	2,520	2,523	100	3,538	71	-626	1,018
New Bullards Bar Res	Yuba	651	622	105	966	67	-145	315
Folsom Lake	American	387	554	70	977	40	-241	590
New Melones Res	Stanislaus	1,965	1,440	136	2,420	81	-5	455
Don Pedro Res	Tuolumne	1,514	1,435	105	2,030	75	-176	516
Lake McClure	Merced	661	536	123	1,025	64	-14	364
Millerton Lake	San Joaquin	290	345	84	520	56	-146	230
Pine Flat Res	Kings	598	533	112	1,000	60	-224	402
Isabella	Kern	168	180	93	568	30	-77	400
San Luis Res	(Offstream)	1,722	1,759	98	2,039	84	---	317

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for March 2012, issued February 29, 2012, suggests above average precipitation for Northern California and below average precipitation for Southern California. The outlook suggests no tendency for above or below average rainfall for the central part of the State.

## HYDRO-CLIMATE ANALYSES

Good progress overall on the Feather, Yuba and Merced PRMS models. The full team meeting on February 10 revealed good progress and new milestones were set.

New climate data locations are enhancing the Feather model's ability to lapse temperatures into the watershed which creates a more realistic snow model condition. The Feather model still requires new calibrations but April-July forecasts are high compared to traditional statistical methods. The team is planning for full calibration by the end of May with focus on all sub-watersheds. This team is meeting weekly and includes PG&E staff.

All Full Natural Flow (FNF) values on the Yuba were evaluated further for quality assurance and have been deemed suitable for calibration. Two filters were used to re-evaluate the data: one for rain events and one for snow melt events. We are on schedule to have a beta version of the model to test by June 1.

Similar progress has been made on the Merced model. United States Geological Survey (USGS) has added a South Fork Merced segment to the model as well as a North Fork ungauged stream segment. These segments will prove valuable in modeling the early snow melt indicators and better enable us to forecast timing of peak snow melt. The Merced should be ready to test a beta version by the summer.

## SNOW SURVEYS AND SNOW COURSE MAINTENANCE

As of March 9, 2012, the regional snow pack conditions as reported by the remote snow sensors are as follows:

**Northern Sierra** - 10" of SWC for 36% of April 1 Avg. and 38% to date

**Central Sierra** - 9" of SWC for 31% of April 1 Avg. and 33% to date

**Southern Sierra** - 7" of SWC for 29% of April 1 Avg. and 31% to date

**Statewide** - 9" of SWC for 32% of April 1 Avg. and 34% to date

This represents only a three inch gain in snow water content during the month of February.

The third round of snow surveys for this season was conducted on or around March 1, 2012. For the stations along Highway 50 near Echo Summit the manual readings were as follows:

Location	Elevation	Snow Depth	Water Content	% of Average
Alpha	7600'	19.4"	4.9"	18
Phillips Station	6800'	17.7"	3.9"	16
Lyons Creek	6700'	30.5"	8.3"	33
Tamarack Flat	6500'	24.0"	6.0"	26

Statewide, the measurements from the snow courses around March 1 revealed slightly drier snow pack conditions, largely due to the fact that many measurements were taken prior to the winter storm that hit the state February 29 - March 1. Measurements in the Sacramento River Valley watersheds recorded a snow pack that is 27 percent of the historical March 1 average. Measurements in the San

Joaquin Valley watersheds indicated a snow pack that is 27 percent of the March 1 average while the snow pack for the Tulare Lake region was 34 percent of the March 1 average. Statewide, the snow pack was measured at 31 percent of the March 1 average and 27 percent of the historical April 1 average.

Comparing the March 1, 2012 statewide snow survey results to snow course data going back to 1950, the current conditions in the Northern Sierra rank fourth driest in the 62 year record while the conditions in the Central Sierra are 3<sup>rd</sup> driest and the Southern Sierra fifth driest for the same period.

The next snow course measurements will occur during a 10-day window surrounding April 1, 2011.

### **REAL-TIME DATA COLLECTION NETWORK**

Efforts continue to coordinate moving the extreme precipitation network GPS-Met, snow level radar, and soil moisture data into California Data Exchange Center (CDEC) from National Oceanic Atmospheric Administration (NOAAs) Earth Systems Research Laboratory. No new progress to report at this time.

### **HYDROLOGIC DATA MANAGEMENT**

The Snow Surveys section continues to collect, review, Quality Control, and enter FNF, precipitation, snow, and reservoir storage data for thousands of locations statewide on a daily basis. With this data staff continues to issue daily, monthly, and seasonal water condition reports on CDEC. The extreme dry conditions have brought a lot of media attention and a lot of question from cooperating agencies. During the month Snow Surveys staff alone responded to over one dozen media requests. Many of the calls focused on a historical perspective for how dry it has been and if we have enough reservoir storage to endure the dry spell. Many news agencies are starting to ask if we are in a drought. Other calls were handled by other Hydrology Branch staff.

### **BULLETIN 120 AND WATER SUPPLY INDEX FORECASTS**

From the March 1, 2012 Bulletin 120: The projected median April-July runoff in the major Sierra river basins ranges from 22 percent on the Cosumnes River to 71 percent on the McCloud River. Forecasted median Water Year runoff ranges from 21 percent for the Cosumnes River to 58 percent on the Kern River.

Due to below average precipitation, snow accumulations, and runoff during the month of February, the projected median April-July runoff dropped by an average of 13 percent for all rivers considered in this forecast. The WSI forecast can be summarized as follows:

#### **Sacramento River Unimpaired Runoff Water Year Forecast**

7.8 MAF (50 percent exceedance or 43 percent of normal)

#### **Sacramento Valley Index (SVI)**

5.5 (50 percent exceedance or Dry)

#### **San Joaquin Valley Index (SJI)**

1.7 (75 percent exceedance or Critical)

The SVI and SJI have both decreased since the February 1 WSI forecast, however the water year classifications have remained the same.

Unimpaired flows for the month of February remained well below average for all major Central Valley Rivers, ranging from as low as nine percent of average on the Cosumnes River to 58 percent on the Kern River at Isabella. Water year runoff totals through February ranged from 16 percent of average on the Cosumnes to 97 percent on the Kern River at Isabella.

Regionally, water year runoff totals stood at 36, 35, and 71 percent of average to date in the Sacramento River Region, San Joaquin River Region, and Tulare Lake Region, respectively. Full Natural Flow for the beginning of March ranged from as low as 12 percent of average on the Cosumnes River to 40 percent on the Kern River at Isabella.

A Bulletin 120 Update for conditions on March 13, 2012 will be available Thursday, March 15. The April 1, 2012 Bulletin 120 forecast will be available on April 9, 2012.

The current 6-10 day weather outlook does include what could be the first real significant winter storm of the season entering Northern California by Monday, March 12. Precipitation amounts could be well above average for the North Coast and the Northern Sierra Nevada with good amounts stretching down into the Central Sierra Nevada. Certainly this would be a welcome change.

Work continues on the University of California Task Orders for studies supporting climate change hydrology effort. Quarterly meetings with the principal investigators have been held or identified and progress reports obtained. Projects are on track and meeting expectations to date. Two-page summaries of projects and products have yet to be developed but are expected in the next month.

The lack of precipitation and snow this winter is leading to a greater number of analyses on where this year ranks versus other dry years. For the 8-station index, the October through February precipitation total of 17.5 inches is approximately 50% of average and is the fifth driest out of 92 years of record. The San Joaquin 5-station index is third driest out of 64 years of record and is only 43% of average at the beginning of March. The regional snowpack rankings based on the March 1 manual surveys are fourth lowest for the northern region, third lowest for the central region and fifth lowest for the southern region. Reservoir storage is still slightly above average for this time of year.

Participation in the federal Hydrologic Frequency Analysis Work Group (HFAWG) will begin in March when the group holds a meeting on March 19. The meeting will discuss the testing of the new parameter estimation method proposed for updating the Bulletin 17B.

## **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.*

## **RESERVOIR COORDINATED OPERATIONS**

Except for Success and Terminus in the Tulare Basin, all flood control reservoirs are below their respective flood conservation pool. Since the beginning of this flood season on October 1, only Black Butte and Terminus reservoirs made any flood releases.

DFM forecasters are currently monitoring the Head of Old River barrier project. By mid-March, the project will construct a rock barrier at the Head of Old River. The barrier will be dismantled after June 1. If the river forecast is greater to equal to 7,500 cubic feet per second upstream on the San Joaquin River at Vernalis, the Division of Engineering is be notified and instructed to remove the barrier. An Emergency Operations Plan is in place and coordinated between the upstream reservoirs and DWR.

Staff continues to participate with the Corps of Engineers, Bureau of Reclamation and Sacramento Regional Flood Control Agency (SAFCA) to develop the operational criteria for the auxiliary spillway for the Folsom Joint Project.

## **RIVER FORECASTING**

Daily forecasts of reservoir inflows, river flows and water levels throughout California and in parts of Nevada were provided in collaboration with the National Weather Service California-Nevada River Forecast Center.

River and tide forecasts for 92 locations in California and in parts of Nevada were issued.

## **LIBRARY OF MODELS**

The Library of Models (LOM) technical team continues to test and refine the features of the web application. An update will be presented to the FAXCT-7 team in mid-April.

## **FLOOD OPERATIONS EMERGENCY RESPONSE**

*This element includes all preparation and planning to execute flood fights, deploy teams, provide training, and coordinate local response needs and federal assistance in the event of a flood. This includes maintaining the readiness of the Flood Operations Center and all the staff that may have to staff it in the event of an*



*emergency and assuring local response efforts can be integrated into the State response system.*

## **FLOOD OPERATIONS, TRAINING AND EXERCISES**

The Flood Operations Center (FOC) is currently developing various training courses. The FOC is developing position-specific training focused on Flood Information Specialists (FIS). FIS will be utilized within the Plans & Intelligence Section of the FOC during emergency operations. Those participating in the training will be familiarized with the FIS position under SEMS/ICS, California geography and hydrology, flood control systems, data resources, and information dissemination including communications logs, river recordings, and high water notification calls.

In order to streamline the process of generating and disseminating Directory of Flood Officials and Emergency Phone Cards, FOC staff is currently working with the Decision Support Section to enhance Flood Operations Center Information System (FOCIS). With these updates, FOCIS users will be able to utilize their DWR usernames and passwords as well as request hard copies of the Directory of Flood Officials (DOFO) and Emergency Phone Cards throughout the year.

The FOC is continuing its efforts to enhance the Flood ER Executive Update issued during flood operations or extreme weather events. Comments from Hydrology and Flood Operations Branch staff have been incorporated into the template for the Flood ER Executive Update. The California Data Exchange Center staff is reviewing the template to develop an application to potentially achieve the ultimate goal of automating the collection, collation, production, and dissemination of flood operations and hydrologic information contained on the Flood ER Executive Update.

The finalized After Action Report for the Environmental Tabletop Exercise conducted on December 8, 2011, was distributed to all participants. The exercise highlighted the need for further development of notification protocols, definition of emergency operations and flood fight activities, baseline assessment tools, training, and a follow-up communications exercise to test the communication/notification plan.

The FOC is collaborating with Federal, State, and local partners to develop the Levee Threat Monitoring Guidelines (LTMG). The purpose of the LTMG is to establish a set of "Best Practices" based on field-tested techniques used by Local Maintaining Agencies, their engineers, flood fight specialists, and levee inspectors to mark and monitor levee threats. Comments from several outreach workshops have been incorporated into a draft booklet that will be sent out for review by mid March.

Now in the middle of the 2011-2012 flood season, the FOC is maintaining its situational awareness and is monitoring the flood control system as needed. River forecast recordings are now being recorded on weekends and holidays to disseminate information to the public.

## **OUTREACH**

Draft funding recommendations for the Flood Emergency Response Projects Delta Communications Equipment Grant are currently being reviewed by DWR Executive. The total amount of available funding is \$5 million with no local match and the grant is limited geographically to the legal Delta. Awards can be expected this spring.

The FOC continues working on the grant guidelines for the Local Flood Emergency Response Projects grant. The goal of this grant program is to improve the effectiveness of, and reduce the time required for, emergency response by local agencies. The total amount of funding available in this round is \$5 million. There is no local match required for this competitive grant. We anticipate the guidelines for the grant to be finalized in early 2012. Both of these grants are funded with Proposition 84 funds.

FOC staff is attending monthly meetings with the Delta Levees Habitat Advisory Committee to facilitate additional communication, as well as re-initiating the Delta Working Group for emergency managers in the Delta. Outreach meetings between Flood Operations Center (FOC) staff and other branches within DWR continue monthly.

## **BASIC INCIDENT COMMAND SYSTEM TRAINING**

Basic Incident Command System training is a requirement of all Department staff to prepare and aid in the Department's flood emergency response. The Flood Operation Center has taken on the responsibility of providing the training of all DWR staff. Basic ICS training includes FEMA IS-100 (introduction to Incident Command Systems), FEMA IS-200 (ICS for single resources and initial action incidents), IS-700 (introduction to national incident management systems (NIMS)), and Intro to SEMS. Class frequency has increase to bi-monthly until we decrease the backlog of DWR certified and qualified emergency responders. Two classes were held on February 16 and 29.

## **COMMUNICATIONS EXERCISE**

On February 29, 2012, Incident Command Teams one and three (ICT1 and 3) met at the North Central Region Office (NCRO) in West Sacramento to conduct communications drills utilizing two of our Emergency Command Communication Trailers (ECCTs). The satellite communications capabilities of the trailers were activated to provide the opportunity to test the transfer of data between the remote field access location of the ECCT and the JOC. The test data was transferred via individual VPN devices to DWR's secured network through the ECCT. Team members also participated in the operation and communication drill utilizing VHF radios and Iridium satellite phones. ICTs demonstrated proper radio procedures using DWR band handheld radios in communication between each ECCT and FOC headquarters. Radio and satellite communications are routinely tested in the event cell phone communications are disrupted or not available, a common occurrence in the Delta.

## **EMERGENCY RESPONSE SUPPORT**

*This element includes various efforts that will further the Departments understanding of the flood system interactions with water supply systems and conjunctive use programs. It also includes the update of the Central Valley hydrology for use in risk assessment and project development. Another component includes developing a comprehensive plan to response to flood events in the Delta.*

The Regional Flood Preparedness Section (RFPS) continues to work with our contractors on the Delta Flood Emergency Preparedness, Response, and Recovery Program. A Draft Project Facility Feasibility Study Report will be available in June 2012 and will present alternatives for development of flood response facilities in the Delta. The Delta Flood Emergency Preparedness, Response, and Recovery Plan will detail DWR's preparedness activities, response actions, and potential recovery strategies. A review Draft of this plan will be available in September 2012. In an effort to coordinate emergency response efforts in the Delta, the Flood Operations Branch currently has two upcoming Delta Working Group meetings scheduled to discuss these elements and other planning efforts with DWR's key emergency response partners in the Delta region.

## **FUNCTIONAL AREA 2 OPERATIONS AND MAINTENANCE**

*Operations and Maintenance is a functional area under FloodSAFE established to ensure project facilities are operated and maintained in good working condition to function as designed. Although Operation and Maintenance has been a long-standing base program within DWR, FloodSAFE has expanded the program and provided additional funding. Historically, Operation and Maintenance projects were undertaken based on a backlog of deferred maintenance. Now, in addition to continuing to work on deferred maintenance, new projects are identified through a number of inspection programs. Operation and maintenance must continue indefinitely into the future, even after the FloodSAFE functional objectives have been achieved although the needs are expected to change over time as system upgrades and modifications are implemented.*

### **CHANNEL MAINTENANCE**

*DWR is responsible for maintaining channel flow capacity for Sacramento River Flood Control Project channels and for performing channel-specific maintenance activities identified in the USACE Operations and Maintenance Manuals, including channel clearance if required to maintain design flow capacity. Channel Maintenance consists of inspection and evaluation, routine operations and maintenance, and implementation of corridor management projects.*

- Bear River – mowing is ongoing.
- MA3 (Feather) – clearing is ongoing.
- MA5 (Butte Creek) – clearing is ongoing.
- MA13 (Cherokee Canal) – clearing is ongoing.
- Debris removal along 50 miles of drainage ditches is ongoing.
- Removal of beaver dams along 50 miles of channels is ongoing.

### **FLOOD FACILITIES OPERATION AND MAINTENANCE**

*DWR operates, maintains, and repairs or replaces flood control structures located throughout the Sacramento River Flood Protection Project to ensure readiness in the event of emergencies and that facilities function as designed. Actions include inspection and evaluation, routine operation and maintenance, and non-routine maintenance. Facilities include pumping plants that transfer runoff and excess water from the land-side of levees in the flood system to flood channels; bridges providing access over and to flood facilities; flow gages; and water control structures such as weirs.*

- The Sutter Bypass Pumping Plant Rehabilitation Project construction is continuing, including control building installation. Sutter Maintenance Yard personnel will continue operating all pumping operations at the plants as needed using the temporary generators furnished by the contractor, until permanent power is reestablished and construction completed.
- Rehabilitation work at the Knights Landing Outfall Gates has begun, with Disney Construction completing preliminary activities. Construction is expected to be complete by October 31, 2012.

## **LEEVE MAINTENANCE**

*This element maintains levees and roads under DWR jurisdiction (State-maintained Maintenance Areas and bypasses) in accordance with USACE Operations and Maintenance Manuals. Annually, after high water recedes, levees are evaluated and repairs are made as necessary. Routine and extraordinary maintenance are also performed as necessary to meet maintenance assurances provided to the federal government.*

- Rodent Program activities for all areas in Sutter Yard and Sacramento Yard jurisdictions are ongoing.
- Tree trimming is continuing on Cache Creek and in MA9.

## **ENVIRONMENTAL INITIATIVES**

*DWR is responsible for planning projects in a way that avoids or minimizes environmental impacts, and for obtaining state and federal environmental permits and clearances for projects within the Operations and Maintenance Functional Area. Environmental Initiatives touches all aspects of this functional area and therefore is considered a close partner to the other maintenance elements and their activities. As such, it should be considered a part of each of the other major elements rather than a stand-alone element. Also, with DWR's established open collaborative process, various local, state, and federal agencies examine issues and develop integrated solutions to the complex environmental compliance requirements and resource opportunities as flood control maintenance activities are undertaken. Components include developing and managing environmental programs, and managing mitigation requirements for lands and habitats developed or acquired by the Department to mitigate for flood management maintenance and improvement projects.*

- The Flood Maintenance agreement with River Partners for management of the Colusa State Recreational Area ends March 30. This site was created to serve as mitigation for the Tisdale Bypass sediment removal project. The site is in the establishment phase and is estimated to require irrigation for one more year. Staff is developing an agreement with the Department of Parks and Recreation (DPR) to continue maintenance at the site. River Partners will be retained to provide technical support to DPR in its management of the site.

## **LEEVE REPAIRS**

*The Levee Repairs Program repairs critically damaged levees and proactively repairs other damaged levees that cannot wait for system improvement projects and require rapid repair before the next flood season. Levee repair projects are implemented through collaboration with federal and state resource agencies, USACE, and local agencies. Levee repairs are done under three federal authorized programs; Sacramento River Bank Protection Project (SRBPP), Levee Stability Program (LSP), and PL84-99 Rehabilitation Assistance Program (PL84-99). In*

*addition, the State repairs flood project levees under the Sacramento-San Joaquin Erosion Repairs Project (SSJERP).*

- **San Joaquin River RM 42.3R (Seepage Repair)**

Re-design of this repair to reflect increase in the original project limits is complete; the new repair includes 1600 feet of slurry wall, 300 feet of ad-on levee, and 700 feet of seepage berm. CVFPB is requiring a new encroachment permit application, which is in process. Construction is scheduled for fall 2012.

### **FUNCTIONAL AREA 3 FLOODPLAIN RISK MANAGEMENT**

*The primary purpose of Floodplain Risk Management is to reduce loss of life and property caused by floods and to restore the natural resources and beneficial functions of floodplains by providing comprehensive guidance and technical support and assessing the floodplain management needs and issues of California communities in order to promote a comprehensive and system-wide flood management strategy.*

#### **FLOODPLAIN MANAGEMENT TECHNICAL SUPPORT**

*Floodplain Management Technical Support provides statewide technical support to federal, state and local agencies, and the public for flood hazard maps, levee data and National Flood Insurance Program (NFIP) activities, including the Community Rating System (CRS).*

Floodplain management technical assistance was provided to the City of Williams and the City of Richmond. Staff also has responded to multiple requests from citizens for technical assistance related to issues associated with the national Flood Insurance Program and federal disaster declarations. Plans to conduct a certified floodplain manager (CFM) examination refresher course in May 2012 have been finalized and staff will host a CFM examination in June 2012. The CFM refresher course and CFM exam will be held in West Sacramento. There is a regular demand for DWR to conduct CFM training courses and host the CFM examination.

#### **STATEWIDE FLOODPLAIN EVALUATION AND DELINEATION**

*Floodplain Evaluation and Delineation works to estimate the frequency, depth, and limits of potential flooding throughout the state providing building blocks in terms of floodplain assessments, standards, methodologies, tools, and analyses supporting multiple applications including FloodSAFE programs and projects and FEMA's National Flood Insurance Program.*

Completion of an automated tool to compute flood discharges for various frequency events along any stream course is near completion and a user's manual will be completed by the end of April. The tool can be used for approximate floodplain delineation studies where historic stream flows are not available.

#### **CENTRAL VALLEY FLOODPLAIN EVALUATION AND DELINEATION**

*Floodplain Evaluation and Delineation works to estimate the frequency, depth, and limits of potential flooding in the Central Valley by providing building blocks in terms of floodplain assessments, standards, methodologies, tools, and analyses supporting multiple applications including FloodSAFE programs and projects and FEMA's National Flood Insurance Program.*

No new information to report.

## **FLOOD RISK NOTIFICATION**

*The Flood Risk Notification Element focuses on communicating flood risk to the public, and local, state and federal agencies to increase flood hazard awareness for areas protected by the State Plan of Flood Control.*

Staff is developing a transition plan for DWR staff to provide all GIS and programming services needed to complete the annual flood risk notification flyer and mailing to 272,000 property owners.

## **FLOOD RISK PLANNING**

*Flood Risk Planning is focused on incorporating flood risk management into statewide and local land use decision making to identify potential flood hazards and mitigation strategies to reduce flood risks through creating planning approaches and data sets that help agencies, communities, and individuals make better informed decisions.*

- On February 14, staff presented a second DWR sponsored Climate Change-Extreme Events workshop in West Sacramento. Multiple DWR floodplain management projects and programs were presented at the workshop.
- On March 1, staff made a presentation to a committee of the National Research Council Committee on “Levees and the national Flood Insurance Program.” Various DFM programs were highlighted in the one-hour invited presentation.
- On March 8, staff provided support at the DWR sponsored Urban Level of Protection Workshop held in West Sacramento.
- Staff participated in the second meeting of the Federal Interagency Floodplain Management Task Force (FIFTF) Project Advisory Committee. The FIFTF will make recommendation on a national level on how federal programs affect floodplain management. The FIFTF will also make recommendations for an update to the 1994 report “A Unified National Program for Floodplain Management.”



## **FUNCTIONAL AREA 4 FLOOD PROJECTS & GRANTS**

*Flood Protection Projects and Grants are responsible for the State's input to project selection and funding. The program is responsible for the majority of physical improvements to the flood management system and provides grant money in the Delta and Statewide. Flood Protection Projects and Projects Grants has been a long-standing DWR base program and is expected to continue indefinitely into the future due to the ongoing need for system improvements and the long-lead time to implement federal flood control projects. The work is based on the acknowledgement that the State will continue to be a significant partner in viable flood management projects in the Central Valley, Delta, and Statewide.*

### **CENTRAL VALLEY FLOOD PROJECTS**

*This element is responsible for the review of flood projects and cost-sharing on federal feasibility studies. It contains three components: Feasibility Studies, Early Implementation Program (EIP) Projects, and Flood Control Projects.*

### **USACE/CVFPB STUDIES SECTION**

The State participates and provides cost-share for feasibility studies with USACE and local partners. Several studies are underway and new ones are expected in the near future.

#### **American River Common Features GRR**

This study will provide flood improvements for Lower American River downstream of the Folsom Dam, Sacramento River downstream of Natomas Cross Canal, and the Natomas Cross Canal to a 200-year level of flood protection. The Post Authorization Change Report (PACR) evaluates alternative plans for the levee system around the Natomas Basin and acts as an interim general reevaluation study to the GRR.

- The GRR Scoping meeting milestone (F3) is now anticipated to be scheduled in mid March. The F3 is a meeting held by USACE to present the analysis and conclusions of the F3 document which describes the without project conditions. Schedule slips have occurred due to the new concept of a "system-wide approach" for plan formulation. USACE has devoted additional time to resolving the issue of existing analyses. The existing analyses for the GRR; which were completed in 2009, will need to address a "system-wide approach."

#### **Frazier Creek Feasibility Study**

This study will generate an EIS/EIR and feasibility study to evaluate federal, State, and local interests in planning, designing, mitigating, and improving existing levee system of Frazier Creek and Strathmore Creek in Tulare County.

- Nothing new to report this month.

#### **Lower San Joaquin River Feasibility Study**

This study is a coordinated effort by the State, USACE and San Joaquin Area Flood Control Agency (SJAFCA) to investigate feasible 200-year level flood protection alternatives and opportunities for floodplain restoration and recovery, recreational enhancements, and ecosystem restoration for the City of Stockton and surrounding

areas. The cost estimate for the study is \$10.6 million with a projected 2016 completion date.

- During the week of February 8, 2012, DWR delivered preliminary geotechnical information and preliminary HEC-RAS models for the LSJRFS project team to use in USACE's planned screening of alternatives. The screening process is on track to be completed in April 2012.

### **Merced County Streams Project-Bear Creek GRR**

This project's purpose is to evaluate options to increase the level of flood protection from a 50-year event to 200-year event for the Merced Urban Area.

- Nothing new to report this month.

### **Rock Creek/Keefer Slough Feasibility Study**

This study will generate an EIS/EIR and feasibility study to evaluate federal, State, and local interests in planning, designing, mitigating, and improving existing levee systems of White River and Deer Creek in Butte County.

- Nothing new to report this month.

### **Sacramento River Flood Control System Evaluation**

The Sacramento River Flood Control System Evaluation (SRFCSE) will concentrate on deficiencies in non-urban levees that may be a threat to small/rural communities due to levee instability as well as identify and prioritize sites that will be presented in a final report. There will be no formulation of projects to correct deficiencies during this study.

- Nothing new to report this month.

### **Sutter Basin Feasibility Study**

This multipurpose study aims to address levee improvement measures for existing levee systems as well as environmental restoration and recreation opportunities.

- DWR and Sutter Basin Flood Control Agency (SBFCA) met with USACE on February 29, 2012, to discuss how to screen the remaining alternatives to produce the National Economic Development (NED) plan and the Locally Preferred Plan (LPP). USACE anticipates that this screening can be completed by July 2012. Once the NED and LPP have been determined, more detailed design and study will begin for those two remaining plans.

### **West Sacramento GRR**

The General Reevaluation Report (GRR) is being conducted to study future work necessary to provide a minimum of 200-year level of protection for the City of West Sacramento.

- The Project Delivery Team (PDT) held the Feasibility Scoping Meeting (F3) on March 1, 2012. The F3 is a meeting held by USACE to present the analysis and conclusions of the F3 document which describes the without project conditions. The F3 meeting went well. HQUSACE agreed with USACE division responses to their comments on the F3 Document. USACE District staff will address comments made as a result of the meeting and submit the revised document for HQUSACE approval.

### **West Stanislaus County - Orestimba Creek Feasibility Study**

This study will evaluate feasible flood protection alternatives for the City of Newman and the surrounding agricultural areas to achieve a 200-year level of flood protection.

- Nothing new to report this month.

### **White River/Deer Creek Feasibility Study**

This study will generate an EIS/EIR and feasibility study to evaluate federal, State, and local interests in planning, designing, mitigating, and improving existing levee system of White River and Deer Creek in Tulare County.

- Nothing new to report this month.

### **Woodland/Lower Cache Creek Feasibility Study**

USACE will develop alternatives for a new feasibility study to determine if there is a National Economic Development (NED) plan that is federally justified. The study will continue efforts suspended in 2004 after local resistance to USACE-selected Flood Barrier Option alternative. USACE estimates that the new feasibility study will be complete in 2017 with design of a selected alternative to commence in 2017.

- The DWR, USACE, and City of Woodland are coordinating with the California Department of Transportation's (Caltrans) Deputy Director of Planning and Modal Programs, Marty Tuttle, on having Caltrans participate in the feasibility study. Caltrans' primary concern is the past flooding of Interstate 5 in the City of Woodland.

### **Yuba River Basin Project GRR**

The Yuba River Basin Project consists of increasing the level of flood protection in the Yuba River Basin communities of Marysville, Linda, Olivehurst, and Arboga.

- The Central Valley Flood Protection Board approved submitting a letter to the USACE selecting the National Economic Development Plan (NED) as the Tentatively Selected Plan for the GRR, on February 24, 2012. The GRR will now be able to advance to the next milestone, Civil Works Review Board.

### **EARLY IMPLEMENTATION PROGRAM (EIP) PROJECTS**

EIP includes projects that are ready to proceed in advance of the CVFPP. An element of approval for these projects ensures that they do not eliminate opportunities or prejudice the flood risk reduction alternatives that would provide regional or system wide benefits.

### **Levee District 1 - Setback Levee at Starbend Feather River (LD-1)**

Levee District 1 constructed a 3,400 foot long setback levee at Star Bend near RM 18.0 on the right bank of the Feather River. The setback levee provides increased flood protection for Yuba City and Feather River.

- No change since last month. DWR staff is waiting for LD-1 to provide closeout documents to begin the closeout process.

### **Reclamation District 17 - 100-Year Seepage Area Project (RD-17)**

The RD-17 levees have unacceptably low factors of safety for under- and through-seepage. These issues are being addressed by constructing seepage berms, slurry walls, and a setback levee to increase the level of flood protection for South Stockton, Lathrop and Manteca communities.

- RD-17 presented their plans for 60% design in mid January.
- DWR is currently awaiting further results from the piezometers installed in June of 2011 to verify proper construction.

### **Three Rivers Levee Improvement Authority – Feather River (TRLIA-FR)**

This project will offer 200-year flood event protection for both Highways 65 and 70 benefiting the areas of 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 site mitigation, agricultural use and habitat.

- Permit No. 18690 to install chain link fencing, K-rails, and a maintenance road within the Sacramento San Joaquin Drainage District Right-of-Way, parallel to and on the landside of the Feather River east (left) bank levee and Yuba South Levee (Yuba County) was heard at the January Board meeting. Due to late notification of one of the lot owners, and the drainage issue, the CVFPB rescheduled all the hearing to a special Board meeting that took place in Marysville on March 2, 2012. The Board heard the individual lot owners' arguments but decided to render its decision on the next Board meeting.

### **Three Rivers Levee Improvement Authority - Upper Yuba River (TRLIA-YR)**

This project will complete a levee system designed to provide 200-year level of protection for 40,000 residents in South Yuba County.

- Minor erosion levee embankment areas have occurred following the latest storm and contractors are in the process of repairing the damaged locations.

### **Sacramento Area Flood Control Agency - Natomas Cross Canal (SAFCA-NCC)**

This project, part of the Natomas Levee Improvement Program, would improve the level of flood control protection to the Natomas Basin by providing at least 200-year level of flood protection. This is accomplished by installing cutoff walls to prevent seepage, under-seepage, and raise the levee.

- SAFCA has submitted the NCC Project Completion Report, dated May 9, 2011, which was received on June 24, 2011. EIP has processed a 10% retention payment for Phases 1/1B in the amount of \$404,991.49. SAFCA has submitted and DWR Staff is reviewing a SAFCA closeout request for the remainder of NCC 2, an amount of approximately \$2.23 million. CVFPB staff request sampling of the NCC cutoff wall prior as part of the permit and SAFCA has submitted a sampling plan. Sampling is expected to be completed in March and a report issued.

### **Sacramento Area Flood Control Agency – Sacramento River East Levee (SAFCA-SREL)**

This project, a part of the Natomas Levee Improvement Program, would improve the level of flood control protection to the Natomas Basin by providing at least 200-year level of flood protection. This is accomplished by installing cutoff walls to prevent through seepage, under-seepage, and raise the levee. SAFCA plans to complete components to Element 12A (approximately RM 67) along the Sacramento River in 2011 and have USACE complete the remainder. This is estimated to occur in 2014.

- Construction is currently underway on Elements 10 to 12A (I5 to Powerline Rd). Sukut Construction has completed approximately 90% of the demolition and 50% of the total construction (total contract amount - \$19.2 million). SUKUT has filed a claim with SAFCA for approximately an additional \$6 million which is going to be settled by negotiations between the SAFCA and Sukut attorneys. DWR is not a party to these negotiations but we have asked for a detailed explanation of the settlement. No ground disturbing construction is currently in progress.
- Construction is continuing by Nordic Construction on Elements 6B to 9A (Teal Bend to I5) and is approximately 95% complete. Nordic has recently been issued two Notice of Violations (NOVs) by the Board for unacceptable work. SAFCA is working with Nordic, the Board, and EIP staff to resolve the NOVs quickly. EIP Program staff notified SAFCA that no payments will be made for this portion of the work until the work has been completed in compliance with the plans and specs to the satisfaction of the Board. GEI/Geo Probe has completed sampling activities and a report is due in March 2012.
- SAFCA is in discussions with EIP staff and management for an increase in the Funding Agreement amount of \$193,270,000 by an additional amount not to exceed 10 percent. This increase is due to increased project costs. A Decision Memo has been drafted and is under review by DWR.
- EIP has processed a payment to SAFCA of approximately \$11 Million for work completed.

### **Sacramento Area Flood Control Agency, North and Southport Improvement (WSAFCA)**

The CHP Academy, the Rivers, and the I-Street Bridge projects are part of the North Area Plan and all major construction is complete for these sites. Contractors continue working on punch list items. All three projects are designed to provide 200-year level of protection for about 47,000 residents. The Southport Area, which may include a large setback levee, is currently under design.

- WSAFCA held the Board of Senior Consultant meeting on February 21-22, 2012. In the meeting WSAFCA and its consultants provided an overview of the design background and the preferred alternative. Additionally they discussed the development of project basis of design.

### **Sutter Butte Flood Control Agency, Feather River West Levee Design Project (SBFCA)**

The Feather River West Levee Project will be for the repair of approximately 35 miles of levee along the west bank of the Feather River from Thermalito Afterbay to near Star Bend. The design will include the use of slurry walls and seepage berms

to protect the communities of Gridley, Biggs, Live Oak, Yuba City and Sutter and Butte Counties.

- The Design Funding Agreement for \$9 million was executed on February 10, 2012.
- Design for the SBFCFA project is projected to be at 65% complete in March of 2012.

### **USACE/CVFPB PROJECTS**

The Board continues to participate with USACE on non-federal cost-share funding for projects to upgrade the State-federal flood management system in the Central Valley.

#### **American River Common Features Project**

The American River Common Features Project is improving the levee system along the American and Sacramento Rivers in Sacramento.

- Construction of two sites, R5 and the Mayhew Staging Area Revegetation/Erosion Site Repair, are complete.
- DWR Real Estate is currently negotiating with Sacramento County and City for a programmatic approach to permanent and temporary easements for future Phase 2 and Phase 3 projects including sites L5A, L9A, R9, R10, L13 and NEMDC. Real estate acquisition request for L5A was received by DWR Real Estate.
- USACE is currently in negotiation with WAPA to de-energize powerlines along Site R6 during the FY 2013 construction season.
- The Howe Ave. and R6 sites are on track for construction in 2012 with no extra permanent real estate acquisitions needed.

#### **American River Watershed – Natomas Features Project**

The Project was fully constructed in 1998 and increased flood protection by controlling flows and reducing flood stages in four creeks. The Federal Government approved a significant portion of the project for reimbursement eligibility, and in turn the State will reimburse SAFCA for the state share of the project.

- Staff completed this aged project review and concluded there are funds available to pay \$496,000 in outstanding State-share obligations to SAFCA.
- Requested re-appropriation of \$3.74 million in general funds for reimbursement to SAFCA of approximately \$3.7 million remaining in state-share obligations.
- Initiated paperwork to amend via CVFPB the Local Project Cooperation Agreement with SAFCA for authority to reimburse SAFCA \$3.7 million in additional state-share obligations.

#### **Folsom Dam Raise and Bridge Element**

The Folsom Dam Raise and Bridge Element Project provide Flood Damage Reduction and Dam Safety benefits to Sacramento by moving the Folsom traffic to a new bridge away from the dam and raising the dam by 3.5 feet to increase capacity.

- The Folsom Dam Raise PDT is currently developing optimal construction plans to make best use of projected Congressional authorization and funding.

- A Project Partnership Agreement (PPA) is scheduled for discussion and execution in 2014 for the dam raise portion of the project. The Temperature Control Shutters design is 35% complete and will be put on hold. The focus is shifted to updating the three existing emergency spillway gates.

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

The Folsom Dam Modifications Project (Joint Federal Project) provides Flood Damage Reduction and Dam Safety benefits to Sacramento by building a new spillway structure that would allow much larger volume of water to be released to protect the dam.

- The estimated completion is October 2017.
- An OMG partnering session for charter update and executive leader partnering took place January 17-18 to develop the interagency collaboration.
- Construction - Control Structure excavation of over 245,000 CY is 78% complete, 117,000 yards of loose rock stockpiled. Rock crushing operations moved to Mormon Island Auxiliary Dam.
- Real Estate - Folsom Prison land lease is being processed with DGS, DWR and DCR. Lease signing is scheduled for March 2012.
- Operations Study - Formulation Strategy Group meetings are on-going to evaluate the feasible alternatives for operations. A value engineering workshop will be performed in March to provide screened alternatives and guidance to the Corps to perform hydraulic modeling.
- Design - Chute and Stilling Basin design is 65% complete. Design is approximately one month ahead of schedule. Approach Channel design 35% review scheduled for February 2012.
- Federal Air Quality Standards - Updated calculations of projected air emissions for the Approach Channel work indicate that it will exceed the federal de minimums standard of the Clean Air Act each year. Current outlook of mitigation without extending the schedule is positive.
- FY12 Funding - The USACE capability predictions for federal FY12 are \$28 million and the President's Budget is \$21 million. PCA Amendment No. 3, allowing partner acceleration of funds, was approved by the Central Valley Flood Protection Board on December 2<sup>nd</sup>. The amendment is being signed by all partnering agencies.

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

The Marysville Ring Levee Project provides 200-year or greater flood protection to the City of Marysville by constructing cut-off walls and levee strengthening and reshaping features to the existing levee system surrounding the Marysville urban area.

- Phase 1 levee reconstruction is shut down for 2011. Reconstruction activities will be resumed in the summer 2012 following Phase 1 test panel procedures. USACE Levee Safety is finalizing testing procedure to evaluate installed soil cement bentonite wall (SCB) for continuity, verticality and homogeneity. Wall evaluation scheduled for December 2011 with final wall evaluation results to be released in March, 2012. Phases 2B and 4 geotechnical investigations are underway by Fugro and HDR.

- Local Partners and Board staff are currently in negotiation with USACE to resolve the denial of Section 103 Deferral extension and Section 104 credit denial.

### **Mid-Valley Area Levee Reconstruction Project**

The Mid-Valley Reconstruction Project extends from the Tisdale Bypass to the Sacramento Bypass and includes levees on Sacramento River, Feather River, Yolo and Sutter Bypasses, and Knights Landing Ridge Cut.

- DWR Real Estate is working with PG&E on cost estimates for utility relocation.
- The turnover letter for the O&M supplemental manual for RD 1500 is scheduled to be delivered to DWR in February.

### **South Sacramento Streams Project**

The South Sacramento County Streams Project will increase the level of flood protection from 1-in-50-years to up to 1-in-200-years for the urbanized area of South Sacramento County and an area to the south and east of the City of Sacramento.

- The State is in the initial stages of scheduling and documentation with the construction contractor who will construct 2,850 feet of floodwall along Morrison Creek and UPRR tracks. Construction is scheduled to begin in May 2012.
- SAFCA is pursuing a contract with the City of Sacramento to share in costs to design and construct improvements on Union House Creek upstream of Franklin Boulevard, apart from USACE. A design contract has been issued to a design consultant with a preliminary cost estimate of \$1.95 million between SAFCA and the City of Sacramento for the work. The Unionhouse Creek portion of this project will remain in the USACE authorized project for potential future improvements, however, for the immediate future; it is being handled for the local agencies.
- USACE, the State and SAFCA are performing a conceptual design for the PACR on all of the remaining creeks, and updated floodplain information was reviewed in January which is likely to cause a significant reduction in work effort on Florin Creek.

### **West Sacramento Area Project, Slip Repair**

Slip repairs were a series of deficiencies that were identified under the feasibility study that was authorized by the Congress.

- Repairs on the South slip are complete and there are no outstanding issues with the South repair. As-built drawings are being prepared for both the North and South repair sites.
- At the North repair site that was completed in October 2011, the dewatering wells were improperly abandoned. The remedial work was scheduled to be performed February 13-24, 2012.



## **STATEWIDE FLOOD PROGRAMS**

*The Statewide Flood Programs provide financial support to local entities for flood and ecosystem restoration related projects throughout the State. These programs include Flood Control Subventions Program, Flood Corridor Program, Local Levee Assistance Program, and Yuba-Feather Flood Protection Program.*

### **FLOOD CORRIDOR PROGRAM (FCP)**

The Flood Corridor Program provides local assistance grants to local governments, special districts, and non-profit organizations for flood risk reduction projects using non-structural methods. Each project must also include an ecosystem restoration or agricultural land conservation component.

- Three comment letters were received during the comment period which resulted in two additional projects recommended for funding for a total of \$58.3 million. Final Funding Recommendations are expected to be signed by the Director during March.

### **FLOOD CONTROL SUBVENTIONS PROGRAM (FCSP)**

The Flood Control Subventions Program provides financial assistance to local agencies cooperating in the construction of federally authorized flood control projects outside of the Central Valley and the State Plan of Flood Control.

- Four claims for total of \$13.5 million were approved for payment.
- Thirteen claims for \$47.6 million are currently being reviewed.
- No audit payments were processed.
- Twelve new claims for total of \$2 million were received.
- In total, thirty eight claims for \$90.8 million are pending review.
- Revision of Program Guidelines is pending review and comment.

### **LOCAL LEVEE ASSISTANCE PROGRAM (LLAP)**

LLAP provides financial assistance to local agencies to evaluate and perform urgent repair on their flood control facilities outside of the Central Valley and the State Plan of Flood Control.

- The Program Solicitation Package (PSP) application period ended on December 8, 2011. About 50 applications were received for a total of \$87 million. Staff has completed the Acceptability and Completeness Review of all applications. The Consensus Team is currently performing reviews of applications. Staff are preparing for the Consensus Team Meetings to take place next month, which will result in final raking scores for each application
- Contra Costa County's Invoice #4 was reviewed and approved. Additional funds have been encumbered as a result of an amendment to the contract and Invoice #4 payment has been processed through the budget office.
- Del Norte County submitted the Klamath Glen Levee Final Geotechnical Report. Review of the report has been completed. Release of retention funds is being processed through the budget office. Once funds are released, the project will be closed out.
- Marin County continues to hold up project operations as it awaits information from USACE. An amendment to the contract, extending the termination date an additional 6 months, is receiving signatures for formal approval.

- City of Oroville submitted the first quarterly report for the City of Oroville Levee Project.

### **YUBA-FEATHER FLOOD PROTECTION PROGRAM (YFFPP)**

YFFPP provides Proposition 13 financial assistance to local entities demonstrating non-structural flood management projects showing a potential significant reduction of peak flood flows, flood stage, flood risk (including wildlife habitat enhancement and/or agricultural land preservation) on the Yuba and Feather Rivers.

- Staff is currently reviewing a new application for geotechnical evaluations along the Yuba River with the Three Rivers Levee Improvement Authority. A decision memo request is being processed for approval.
- USACE submitted Funds Request for Sutter Basin FS. Invoice #4 was processed for contract 4600008888 (unrestricted funds \$650k) paying out the remaining balance in the agreement. Contract close out is underway.
- Staff is obtaining data to reconcile program funding. Table will be used to update YFFPP funds in DWR's internal database as well as determine program funds.

### **PROGRAM SUPPORT**

*The program support function is designed to ensure the various programs and their projects receive sufficient technical and administrative support to be successful. These support functions are Grant Guidelines, Environmental Services, Technical Assistance, and Federal Coordination.*

### **GRANT GUIDELINES and PROGRAM SOLICITATIONS**

No new guidelines or PSP are currently under public review.

### **ENVIRONMENTAL SUPPORT**

FCP has a number of environmental resources that provide technical assistance to various FPO projects.

- Most activities are described under the individual project headings.
- As part of the Lower Feather River Corridor Management Plan development, staff is working with the support consultants, AECOM and cbec, to modify the hydraulic analyses to address potential changes in low flows as a result of the breach at Shanghai Rapids. This breach changes the low flow conditions, and has the potential to change planned actions to create frequently inundated floodplain for habitat benefits.

### **TECHNICAL ASSISTANCE**

LLAP has resources to provide technical assistance in flood modeling, GIS, technical consultation, design criteria development, and databases to various programs in FPO.

- The final AB 1788 regulations package has been submitted to the Division Chief of Flood Management for approval.
- Staff has developed a draft issue paper on Easements and Right-of-Ways for Flood Projects.
- Staff developed GIS maps for Flood Corridor and Environmental Support Branch projects.

## **REGIONAL PLANNING**

Regional Planning is a new initiative resulting from the drafting of the 2012 Central Valley Flood Protection Plan. LLAP is taking the lead in the data collection effort for the Regional Plans.

- Development of Regional Atlases continues.
- Planning coordination continues with FMO, FESSRO, CVFPO, and consultants.
- The Draft PMP for regional planning has been completed

## **DELTA FLOOD PROJECTS**

*This is a grants program that works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta including water supply, habitat, and wildlife. The program, through its two major components; Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects, works with the local agencies to maintain, plan and complete levee rehabilitation projects. One of the requirements to qualify for available funds is the project to result in no net loss of habitat in the Delta. Additional responsibilities under the Bay-Delta Levees Branch are in support of the levee system and habitat development; improve the flood fight capability of the Delta through planning, cooperative efforts, encouraging the development of emergency response plans for each Delta island, and conduct studies and contract efforts necessary for program purposes.*

## **DELTA LEVEES MAINTENANCE SUBVENTION PROGRAM**

DWR staff, on behalf of the Central Valley Flood Protection Board, initiates and manages work agreements to fund levee maintenance and rehabilitation. To date, the status of work agreements is as follows

### **Work Agreements for FY 2009-2010**

- DWR staff has completed 62 joint levee inspections and received DFG approval for 61 claims. Payments will be processed by staff as DFG approves the claims. Staff has received 62 final claims for the maintenance work totaling \$13 million and, to date, and 61 reimbursements have been paid totaling \$9.2 million.

### **Work Agreements for FY 2010-2011**

- DWR staff has mailed work agreements to 68 reclamation district and has received signed work agreements from 65 reclamation districts.
- Final Claims have been received from 61 reclamation districts totaling \$17.9 million.
- DWR staff has completed 55 joint levee inspections and received DFG approval for 42 claims. Payments are being processed by staff as DFG approves the claims.

### **Work Agreements for FY 2011-2012**

- The FY 2011-2012 funding allocation plan, presented to the Board on September 23, 2011, has been approved by the Board. The plan allocates the funding of \$12 million to 66 reclamation districts.
- Staff mailed Work Agreements on October 25, 2011 to participating districts for signature.
- To date, staff has received 51 agreements back from the districts. Agreements signed by the districts will be routed to the Board's Executive Officer for final signature.

### **DELTA LEVEES SPECIAL FLOOD CONTROL PROJECTS**

DWR initiates and manages project funding agreements in support of local agencies' levee rehabilitation, habitat, or other projects. DWR is executing agreements authorizing the work proposed under Project Solicitation Packages.

- The HMP Project Solicitation Package was released on January 20, 2012. The PSP is focused on HMP work, and allows local agencies to improve their levees to the HMP standard. The deadline for the local agencies to submit proposals is February 27, 2012.

Current information can be found at:

<http://www.water.ca.gov/floodmgmt/dsmo/bdlb/spp/>

## FUNCTIONAL AREA 5 EVALUATION & ENGINEERING

*Evaluation & Engineering is a FloodSAFE Functional Area established to address assessments of existing flood management facilities to identify deficiencies and needed improvements. This is a new Functional Area that is expected to continue after the FloodSAFE foundational objectives are met. Functional Area activities are performed in partnership with the USACE, which prior to FloodSAFE, conducted most evaluations and engineering for existing facilities. This Functional Area is based on the acknowledgement that changing conditions, new knowledge about system performance, and eventual facility deterioration will demand continued evaluation and engineering services.*

### **URBAN LEVEE EVALUATION (ULE)**

*DWR is required to evaluate the current level of performance of the State-federal flood protection system in the Central Valley. Urban levees are levees that provide protection to developed areas with a population of at least 10,000 people. The evaluation of current urban levee performance is to include an estimate of the risk of levee failure, a discussion of the inspection and reviews performed, and recommendations regarding the levees and future work activities. The geotechnical engineering being performed will help flood managers understand the overall flood risks to populated areas in the Central Valley and consider alternative changes to the flood management system to better manage the risks.*

ULE is evaluating 470 miles of urban levees for hidden defects. The 470 miles include State-Federal project levees as well as associated non-project levees that provide protection to urban areas receiving some protection from the State-Federal flood system. Urban levees are being evaluated to determine whether they meet defined geotechnical criteria and, where needed, identify remedial measures, including cost estimates, to meet the defined geotechnical criteria. The information being developed will be used in support of the Central Valley Flood Management Planning Program to inform development of two required documents: the Flood Control System Status Report and the Central Valley Flood Protection Plan.

<b>Geotechnical Evaluation Reports</b>			
<b>Study Area</b>	<b>% Complete</b>	<b>Study Area</b>	<b>% Complete</b>
<b>Chico</b>	<b>35</b>	<b>NEMDC East</b>	<b>45</b>
<b>Marysville</b>	<b>49</b>	<b>Natomas</b>	<b>17</b>
Sutter	35	<b>Bear Creek</b>	<b>30</b>
<b>RD 784</b>	<b>46</b>	<b>Calaveras River</b>	<b>30</b>
<b>Davis</b>	<b>15</b>	<b>RD 404</b>	<b>42</b>
<b>Woodland</b>	<b>16</b>	<b>RD 17</b>	<b>53</b>
<b>American River</b>	<b>45</b>	<b>Stockton Non-Project</b>	<b>37</b>
West Sacramento	98	W. Sac. Non-Project	15
<b>Sacramento River</b>	<b>51</b>	<b>South Sac. Streams</b>	<b>15</b>

Changes shown in bold.

- Overall, ULE is 71% complete.
- The West Sacramento GER (Volumes 1 and 2), the template for all GERs has received comments from the city and LMA and is continuing to be finalized.
- Workplans and task orders for further drilling are being developed for South Sac Streams, RD 784 (WPIC), and RD 17.
- Schedules for completion of the Geotechnical Evaluation Reports (GERs) Program are continuing to be modified and tracked with the current delivery date of the GERs scheduled for the middle of 2013.
- Marysville, Sacramento River, RD 784, NEMDC East, American River, RD 404, and RD 17 GERs continue to be active. The Natomas South GER was initiated during the reporting period.

### **NON-URBAN LEVEE EVALUATION (NULE)**

*DWR is required to evaluate the current level of performance of the State-federal flood protection system in the Central Valley. Non-urban levees are levees that provide protection to agricultural areas and developed areas with a population of less than 10,000 people. The evaluation of current system performance is to include an estimate of the risk of levee failure, a discussion of the inspection and reviews performed, and recommendations regarding the levees and future work activities. The geotechnical engineering being performed will help flood managers understand the overall flood risks to populated areas in the Central Valley and consider alternative changes to the flood management system to better manage the risks.*

NULE is evaluating 1,620 miles of non-urban levees for hidden defects. The non-urban levees being evaluated include State-Federal project levees and associated non-project levees that also provide protection to non-urban areas receiving some protection from the State-Federal flood protection system. Non-urban levees are being evaluated to determine whether they meet defined geotechnical criteria and, where needed, identify remedial measures, including cost estimates, to achieve the defined geotechnical criteria.

The information being developed will be used in support of the Central Valley Flood Management Planning Program to inform development of two required documents: 1) the Flood Control System Status Report and 2) the Central Valley Flood Protection Plan.

- Overall, Non-Urban Levee Evaluations are 52% complete.
- No drilling activities other than a few locations with access constraints were completed during this reporting period.
- Schedules for completion of the GORs are continuing to be prepared with the current delivery date of the GORs scheduled for the middle of 2013.
- GOR pilot studies are ongoing in the Woodland South and Gravelly Ford study areas.
- In support of the draft CVFPP, NULE effort is being redirected to prioritize support for the FMO critical repairs program and the FAXCT9 Regional Plans.

## **TECHNICAL REVIEW**

*Geotechnical analyses are being conducted on behalf of the CVFPB on an “as-needed” basis and to support proposed and ongoing capital improvement projects. Collaboration with the USACE is occurring with on-going geotechnical studies, including review of associated documents that may impact the CVFPP.*

- Technical reviews are currently being performed for SAFCA (AR Common Features), the Sutter Butte Area Flood Control Agency, and the (LSJFS) Lower San Joaquin Feasibility Study, and RD 17.
- ULE/NULE provided additional supporting data to USACE for the LSJFS.

## **TECHNICAL POLICY**

*A statewide seismic policy is being developed for levee performance, emergency levee remediation, and long-term levee remediation. Urban Levee Design Criteria (ULDC) are also being developed to guide local urban levee improvement projects. Research is being conducted to resolve gaps in knowledge associated with the effects that woody vegetation growing on or near levees has on levee integrity; and provide technical support for the development of vegetation management policies as part of the CVFPP.*

- Vegetation management policies and research continues.
- With the completion of the draft West Sacramento GER, seismic studies are continuing in the study area for an overall general cost estimate for seismic deficiencies and cost benefit analysis of these fixes.
- Participated in various FloodSAFE FAXCTs (Functional Area Cross Coordination Teams).
- Continuing support for Version 5 of the Urban Levee Design Criteria was provided.

## **FUNCTIONAL AREA 6 FLOOD MANAGEMENT PLANNING AND CONSERVATION STRATEGY**

*The Flood Management Planning and Conservation Strategy Functional Area refer to the planning and analysis necessary to evaluate flood systems as complete systems consistent with the intent of the FloodSAFE Implementation Plan rather than a set of individual, isolated projects. This functional area consists of three elements: Central Valley Flood Management Planning (CVFMP) Program, Statewide Integrated Flood Management Planning, and Conservation Strategies.*

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

*The CVFMP Program is one of several programs being managed within FloodSAFE California. The CVFMP Program addresses most of the flood-related planning activities that were authorized by the Legislature during the 2007/2008 session within much of the Central Valley. The CVFMP Program consists of two primary projects - State Plan of Flood Control (SPFC) and the Central Valley Flood Protection Plan (CVFPP).*

### **STATE PLAN OF FLOOD CONTROL (SPFC)**

The SPFC primarily includes: (1) SPFC Descriptive Document and (2) Flood Control Systems Status Report (FCSSR). The SPFC Descriptive Document and FCSSR were completed and provided to Board in November 2010 and December 2012, respectively.

### **CENTRAL VALLEY FLOOD PROTECTION PLAN (CVFPP)**

The CVFPP reflects a system-wide approach to protecting lands currently protected from flooding by the SPFC. Legislation required that an initial plan be completed by January 1, 2012, and updated every five years thereafter.

- A Public Draft of the 2012 CVFPP was provided to the Central Valley Flood Protection Board (Board) on December 30, 2011 and formally presented to the Board at their January 27 meeting. It was released to the public for review on January 2, 2012 and is available, along with several factsheets, videos and other program documents on the CVFMP website:  
<http://www.water.ca.gov/cvfmp>.
- At the Board's February 24 meeting, the public provided recommendations for topics for which the Board should focus its review in bringing the Public Draft 2012 CVFPP to adoption.
- All 29 technical attachments, organized into five volumes, for the CVFPP were made available for public viewing on the CVFMP website. DWR staff will brief the Board on these technical attachments at their regular March 23, 2012 meeting.
- DWR released the *Public Review Draft Program Environmental Impact Report* (DPEIR) for the 2012 CVFPP on March 6, which began the 45-day public review and comment period ending on April 20, 2012. The DPEIR will inform the public and decision makers about potential program-level environmental effects and mitigation measures that may result from implementation of the CVFPP. The DPEIR is available on the CVFMP website, at several local and regional libraries,



and at DWR offices within the Central Valley with the locations also posted on the CVFMP website. DWR will formally present the DPEIR to the Board at their March 23 regular monthly meeting.

- Within the DPEIR comment period (March 6 – April 20), DWR is holding four public hearings to answer questions and receive comments on the document in early April at locations in Sacramento, Marysville, Stockton, and Woodland. These public DPEIR hearings will be held concurrent with Board hearings set to receive comments on the 2012 CVFPP. However, the DPEIR and CVFPP hearing are separate and scheduled for different times during the day with DPEIR hearing to occur after completion of the Board's CVFPP hearing. The April 20 close of comments for the DPEIR also coincides with the Board's deadline for public comments on the CVFPP. Information on schedules, locations and times for these jointly located hearings are posted on both the Board's and the CVFMP websites.
- Coordination continued between the CVFPP Product Delivery Team and Corps on the Project Management Plan (PMP) for the Central Valley Integrated Flood Management Study (CVIFMS).

### **STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING**

*The Statewide Integrated Flood Management Planning Program (SFMP) will assess the flood risk to life and property statewide, and develop recommendations to guide the state's flood risk management strategic policies and investment decisions. The program will inventory existing and future flood management needs in the state's regions, identify opportunities for integrated flood management, and formulate potential integrated flood management solutions. The program will publish a report titled "Report on Flood Future: Recommendations for Managing California's Flood Risk" (Flood Future Report). In addition, SFMP includes integration of flood-related information into the California Water Plan.*

#### **Flood Future Report**

- The recommendations team is working on refinement of the recommendations that will be included in the Flood Future Report.
- Several Technical Memoranda, including Exposure to Flood Hazards, Information Gathering, Risk Information Inventory, Finance, Integrated Flood Management, and Opportunities and Challenges are being prepared for inclusion in the Flood Future Report.
- Work continues on the Working Draft of the Flood Future Report and a Public Review draft is expected to be completed by June 15, 2012.

#### **Integrated Flood Management in the California Water Plan**

- The California Water Plan 2013 Design and Work teams and the Flood Caucus membership are being formed.
- A Flood Caucus meeting was held at the California Water Plan Public Advisory Committee meeting on February 2<sup>nd</sup>.

## **CONSERVATION STRATEGIES**

*The Conservation Strategies Element is designed to provide support and integrate environmental stewardship into the CVFMP Program. Therefore, major progress, such as the status of key documents, progress on major milestones, and upcoming events, is described under the Central Valley Flood Management Planning section above.*

## **CONSERVATION FRAMEWORK AND STRATEGY**

### **Conservation Framework**

Staff provided briefings for CVFPB staff on eight Conservation Framework technical attachments during the series of CVFPP technical attachments briefings for the CVFPB staff in February.

### **Vegetation Management**

Staff created a fact sheet on Levee Vegetation Management.

### **Conservation Strategy Funding Guidelines**

The Final Conservation Strategy Funding Guidelines were approved by the Director on February 23, and will be posted on the FESSRO website. Consultants are also drafting a “Frequently Asked Questions” summary document to be posted to the website.

## **CONSERVATION STRATEGY OUTREACH**

### **Interagency Advisory Committee (IAC)**

The IAC met on February 15<sup>th</sup> and presentations were made on the CVFPP approval process, Draft PEIR, a report from the new IAC Permitting Subcommittee meeting, the Conservation Strategy Work Plan, and the CVFPP Levee Vegetation Management Strategy. The next IAC meeting will be held in April.

### **Local Land Owner/Agriculture**

Staff completed interviews with representatives of the agricultural community. Staff is consolidating and analyzing the results of these interviews to inform broader outreach needs and to identify actions to support agricultural stewardship. Staff leads will speak at the San Joaquin River Resource Management Coalition (RMC), in April. The presentation will cover the Conservation Strategy and its outreach efforts to the Agricultural Community.

## **REGIONAL CONSERVATION PLANNING**

### **Regional Advanced Mitigation Planning (RAMP)**

- Staff met with the USACE Regulatory Office and DFM, to discuss ensuring that DWR-funded advance mitigation will be properly credited by the Corps Civil Works Division within planning for federal cost-share projects. A meeting with high-level management of USACE Sacramento Division is proposed as the next step.
- DWR and Caltrans staff met with UC Davis about finalizing their mapping-related work products to support RAMP implementation.

- Staff continues to work with RAMP partners to improve several draft documents including a draft brochure on the Statewide Framework, draft Regional Assessment for the pilot area, and a preliminary draft outline of an Action Plan.
- Staff is creating an outline for a Communication Strategy for RAMP and will be giving presentations to the Yolo Natural Heritage Program and Yolo County staff in April and the California Wetland Monitoring Workgroup in May.

**Corridor Management Strategies** (in coordination with DFM)

No new information this month.

**Lower Feather River Corridor Management Plan**

Staff presented an overview on the breach in the Shanghai Bend rapids at the monthly Interagency Flood Management Collaborative meeting.

**SCIENTIFIC AND PLANNING INFORMATION**

**Medium-scale Vegetation Mapping**

The final version of the medium-scale vegetation map was completed and submitted for posting to the DFG BIOS public website for statewide vegetation datasets.

These will be linked to CVFMP and FES websites.

**Fine-scale Vegetation Mapping**

Chico State, Geographic Information Center (GIC) staff is continuing work on the fine-scale vegetation map and polygon classification.

## **FUNCTIONAL AREA 7    LEGISLATION, BUDGETS, AND COMMUNICATION**

*The primary goal of the Legislation, Budget, and Communication functional area is to facilitate legislation, budget, and communication matters to aid the efficient work of all functional areas in improving flood safety. This functional area will work to secure sustainable funding to implement the FloodSAFE initiative and to secure legislative support for all other functional areas that must continue indefinitely into the future. It is also responsible for coordination and public outreach consistency.*

### **FUNDING ADVOCACY & AGENCIES' ALIGNMENT**

*Effective coordination between State, federal, and local agencies will be required at all stages from project concept through completion of construction. FloodSAFE implementation will not be possible without federal funding. Proposition 1E requires that the State secure the maximum feasible amounts of federal and local matching funds. This group will, in coordination with DWR Executive Office, serve as the primary State advocate for securing the necessary federal funding. Primary federal partners also include USACE and FEMA.*

- No new information this month.