

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

By

**Gary B. Bardini, 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 May 27, 2011

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

Spring levee inspections continue to be conducted and are expected to be completed by the end of May or early June. The Levee Mile Reports should be finalized and sent out to the LMAs by the end of June. Preparations for summer Channel and Structure Inspections have begun and should be able to be completed on time. Inspectors are dealing with more encroachment permits as construction season starts and continue to conduct investigations and coordination activities with a variety of entities for access to the levees. Inspectors are also participating in Golden Guardian 2011 flood exercise activities.

LOCAL AGENCY PROGRAM

The 2010 Local Agency Annual Report has been delivered to each of the 89 Local Maintaining Agencies (LMAs). CDs of the report have been delivered to 49 city/county libraries within the jurisdictions of the LMAs.

HIGH WATER MARK DATA COLLECTION

The projected high water stages in the San Joaquin River Flood Control System (SJRFCFS) presented a rare opportunity to collect High Water Mark (HWM) data. Flood Project Integrity and Inspection Branch (FPIIB) coordinated with Functional Area (FA) 3, Floodplain Risk Management, FA 5, Evaluation and Engineering and other branches within FA 1, Flood Emergency Response to assess their data needs. On May 3rd, FPIIB engineers starting staking SJRFCFS for HWM data collection. Eastside and Chowchilla Bypasses were staked at 2000 ft intervals and rest of the system is being staked at 2 mile intervals with decreased intervals at confluences and special features. Division of Engineering is conducting surveys. Staking effort will be completed this week and surveying work will take a couple more weeks.

LIBRARY OF MODELS

For the LOM pilot project, a draft document regarding 'model check in guidelines' has been prepared. This document is designed to help the model developers and LOM members follow established procedures to upload their models electronically into the pilot Library. A draft document for model acceptance/approval guidelines has also been prepared. This document is designed to be followed by LOM librarians to ensure the completeness of model contents and information before approval for final posting in the LOM. Initially, separate attachments were created to outline specific guidelines along with general guidelines to upload and approve hydraulic channel and overland flow models, reservoir simulation models, watershed models and Flood Risk Assessment and Damage analysis models for the pilot library. In addition, pilot metadata and model contents for four model types (hydraulic/channel, hydraulic/overland, risk analysis and reservoir simulation models) have been prepared. The web based pilot library infrastructure development is in progress. The documents and model data will undergo an internal review process before being released for the pilot library tests.

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 May 1, 2011, statewide hydrologic conditions were as follows: precipitation, 135 percent of average to date; runoff, 130 percent of average to date; snow water equivalent, 185 percent of average for the date (145 percent of the April 1 average); and reservoir storage, 110 percent of average for the date. Sacramento River Region unimpaired runoff observed through April 30, 2011 was about 16.5 million acre-feet (MAF), which is about 121 percent of average. For comparison, on April 30, 2010, the observed Sacramento River Region unimpaired runoff through that date was about 9.9 MAF, or about 72 percent of average.

In contrast to March, April was relatively dry. On May 1, the Northern Sierra 8-Station Precipitation Index Water Year total was 64.4 inches, which is about 141 percent of the seasonal average to date and 129 percent of an average water year (50.0 inches). During April, the total precipitation for the 8-Stations was 3.2 inches, which is about 81 percent of the monthly average. Last year on May 1, the seasonal total for the 8-Stations was 48.7 inches, or about 107 percent of average for the date.

On May 1, the San Joaquin 5-Station Precipitation Index Water Year total was 57.7 inches, which is about 155 percent of the seasonal average to date and 141 percent of an average water year (40.8 inches). During April, the total precipitation for the 5-Stations was 1.7 inches, or about 49 percent of the monthly average. Last year on May 1, the seasonal total for the 5-Stations to date was 41.9 inches, or about 113 percent of average for the date.

Selected Cities Precipitation Accumulation as of 04/30/2011 (National Weather Service Water Year: July through June)					
City	Jul 1 to Date 2010 - 2011 (in inches)	% Avg	Jul 1 to Date 2009 - 2010 (in inches)	% Avg	% Avg "Water Year" Jul 1 to Jun 30 2010 - 2011
Eureka	42.41	118	38.69	108	111
Redding	30.92	99	29.17	94	92
Sacramento	21.46	125	19.99	116	120
San Francisco	21.02	107	20.70	106	105
Fresno	15.26	144	12.15	115	136
Bakersfield	10.02	163	6.83	111	154
Los Angeles	17.30	135	12.35	96	132
San Diego	12.23	117	10.52	100	114

Key Reservoir Storage (1,000 AF) as of 04/30/2011								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	2,314	2,049	113	2,448	95	---	134
Shasta Lake	Sacramento	4,266	3,974	107	4,552	94	-167	286
Lake Oroville	Feather	3,305	2,939	112	3,538	93	15	233
New Bullards Bar Res	Yuba	884	760	116	966	92	-12	82
Folsom Lake	American	751	730	103	977	77	-52	226
New Melones Res	Stanislaus	1,986	1,482	134	2,420	82	-240	434
Don Pedro Res	Tuolumne	1,584	1,470	108	2,030	78	-70	446
Lake McClure	Merced	689	612	113	1,025	67	33	336
Millerton Lake	San Joaquin	229	365	63	520	44	3	291
Pine Flat Res	Kings	663	610	109	1,000	66	3	337
Isabella	Kern	319	224	142	568	56	-42	249
San Luis Res	(Offstream)	2,026	1,861	109	2,039	99	---	13

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for May 2011, issued April 30, 2011, suggests above average rainfall for the northwestern corner of California. No tendency for above or below average rainfall is suggested for most of Northern and Central California. Below average rainfall is suggested for the south and southeastern parts of the State. Information on current conditions can be accessed through the California Data Exchange Center (CDEC) at the following locations:

Reservoirs: <http://cdec.water.ca.gov/reservoir.html>

Reservoir Current Conditions: http://cdec.water.ca.gov/reservoir_map.html

Precipitation: http://cdec.water.ca.gov/snow_rain.html

Snow: <http://cdec.water.ca.gov/snow/current/snow/>

SNOWMELT & SEASONAL VOLUME RUNOFF FORECASTING

Water Supply Modeling Forum

Meeting location may end up at the Modesto Irrigation District offices in Modesto. Our theme for this year's forum will focus on building "on the fly" statistical tools that will enable our seasonal volume runoff forecasting staff to better analyze the data used for the forecasts. The purpose of the forum would be to identify improvements to the Snow Surveys Program and ultimately the Flood Emergency Response Information System application, using this focus group to suggest a suite of data analysis tools to improve forecasting and reservoir operations overall.

SNOW SURVEYS AND SNOW COURSE MAINTENANCE

Since the April 7 report, the Northern Sierra region lost just 11 inches of Snow Water Content (SWC), the Central Sierra lost 9 inches of SWC, and the Southern Sierra lost 9 inches. Statewide, 9 inches of SWC was lost from the snowpack during April. In other words, the snow pack has largely been preserved thanks in part to a cool April and a cool start to May.

As of May 11, 2011, the regional snow pack conditions as reported by the remote snow sensors are:

Northern Sierra - 37" of SWC for 133% of April 1 Avg. and 243% to date

Central Sierra - 38" of SWC for 122% of April 1 Avg. and 186% to date

Southern Sierra - 30" of SWC for 116% of April 1 Avg. and 176% to date

Statewide - 36" of SWC for 124% of April 1 Avg. and 198% to date

The fourth round of snow surveys for this season was conducted on or around May 1, 2011. For the stations along Highway 50 near Echo Summit the manual readings were:

Location	Elevation	Snow Depth	Water Content	% of Average
Alpha	7600'	117.1"	60.1	231
Phillips Station	6800'	66"	33.7"	209
Lyons Creek	6700'	105.2"	52.2	231
Tamarack Flat	6500'	Missing	Missing	missing

The results of the May snow surveys still show impressive snow throughout the Sierra Nevada. For the stations listed above, Alpha gained 2.2 inches of water content during April at a time when this location is normally losing SWC. Phillips State and Lyons Creek both lost SWC but not nearly the amounts they normally would during this time of the year.

Measurements from snow courses, based on May 1 surveys, indicate that the pack was 202 percent of average to date in the Northern Sierra, 189 percent of average to date in the Central Sierra, and 182 percent average to date in the Southern Sierra. Statewide, these measurements indicate the snow water equivalent to be 187 percent of average to date and 144 percent of the historic April 1 average. Overall, the lower elevation snow courses lost SWC with some losing all snow. This is not unexpected. However, the higher elevation courses above 7500' showed steady or increased SWC during April, but nowhere near the amounts gained in April of 2006.

HYDROLOGIC DATA MANAGEMENT

The Snow Surveys section continues to collect, review, Quality Control, and enter Full Natural Flow (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. During the month, Snow Surveys staff alone responded to over two dozen media requests and conducted several on-camera interviews as well as one live-radio interview. Snow Surveys staff also responded to over twenty historic data requests from a variety of sources (media, consultants, water managers, etc.). Concerns ranged from flooding and the timing of the snow melt, to questions about climate change and La Nina patterns. A few more questions came in regarding outdoor vacation planning, which are not abnormal.

BULLETIN 120 AND WATER SUPPLY INDEX FORECASTS

The May 1 forecasts are posted at:

Bulletin 120: <http://cdec.water.ca.gov/cgi-progs/iodir?s=b120>

Water Supply Index: <http://cdec.water.ca.gov/cgi-progs/iodir/wsi>.

FORECAST SUMMARY:

The projected median April-July runoff in the Sierra river basins ranges from 119 percent for the Pit River to 203 percent for the East Walker River. The South Lahontan and the Tule Lake regions have the greatest number of river basins over 180 percent of normal. Considering all major Sierra rivers, the forecast calls for an April-July runoff of nearly 162 percent of average, which is a 2% decrease from last month. The forecasted median Water Year (WY) runoff in the Sierra river basins ranges from 109 percent of average for the Inflow into Shasta Reservoir to 189 percent for the Cosumnes River.

April was not typical with regards to precipitation and snow ablation. Statewide precipitation was 65 percent of normal for the month. The snowpack has experienced little ablation this April due to the persistent cool temperatures and cloudy days. The statewide May 1 snow course average was 144 percent of the

April 1 average. This reflects a small decrease since April 1. The WSI forecast is summarized as follows:

Sacramento River Unimpaired Runoff Water Year Forecast

23.9 MAF, 50 percent exceedance, 128% of normal

Sacramento Valley Index (SVI)

10.0, 50 percent exceedance, Wet

San Joaquin Valley Index (SJI)

5.1, 75 percent exceedance, Wet

The SVI and SJI of 10 and 5.1 remained the same as the April 1 WSI. However, the Water Year forecast for Sacramento River Unimpaired Runoff increased slightly to 23.9 from 23.8 MAF in April.

RUNOFF

Regional Sierra flows for April in the Sacramento, San Joaquin and Tulare Lake regions were 164, 168 and a 132 percent of average, respectively. Flows for individual rivers in these regions ranged between 128 and 241 percent of average. April flows exceeded 200 percent of average for two rivers (Cosumnes and Kern). The Kern River April runoff was the 2nd greatest runoff on record. Runoff to date (October to April) in the Sacramento, San Joaquin and Tulare Lake regions were 121, 180, and 169 percent of average, respectively. The Pit River had the lowest runoff to date at 97 percent of average.

HYDRO-CLIMATE ANALYSES

Work continues on the University of California studies supporting the climate change hydrology effort. Quarterly meetings with the principal investigators have been held or identified and progress reports obtained. The United States Forest Service (USFS) has requested an archeological study be conducted prior to the American River Snow monitoring instrumentation installation this summer. Efforts are being made to coordinate with the USFS to address this issue and move the project forward. Efforts in the atmospheric river climatology project are being coordinated with the Central Valley Flood Protection Plan to provide some information on potential future conditions.

The Central Valley Flood Protection Plan Climate Change Technical Work Group is moving forward with a technical example to demonstrate the methodology developed in earlier meetings. A conference call was held at the end of April with the technical committee to discuss the implementation strategy for the 2012 plan. After significant discussion, a strategy was formed to allow the consultant team to move forward with their reservoir modeling activities and identified committee members to assist in the write-up of the example.

The Central Valley Climate Variability and Change Study Program continues to be organized. A decision was made to start with the Feather River and Merced River watersheds for pilot application of the methodology. Extension of the methodology to the remaining Central Valley watersheds that lie within the Central Valley

Hydrology Study (CVHS) area will occur once the pilot study is completed and evaluated. A program management plan and a work plan for the climate variability and change phase of CVHS have been prepared and are available on the CVHS project website.

Efforts continue to coordinate the hydraulics and hydrology efforts of DWR with the United States Army Corps of Engineers (USACE). In last month's meeting, the USACE presented material to the CVHS and CVFED teams demonstrating their methods for utilizing CVHS products. The USACE has also instituted a new level of review required for all projects. A meeting was held in April to determine the strategy to accommodate the new review process and to develop a strategy for completing the CVHS project.

The first set of Bulletin 195 files for the Oracle database was delivered from the consultant to the DWR. These files will have annual extremes data and the information to develop depth-duration frequency tables and curves. A meeting was also held with Jim Goodridge and regional office staff to organize a strategy to obtain county and local agency precipitation data and put it into a HYDSTRA database. Annual extremes could be extracted from the data and appended to the Oracle database for Bulletin 195. Next steps include writing the routines to evaluate the time series for the annual maxima at different durations to accommodate the different data bases that store the time series data.

The interface for the Sierra soil moisture probes will be finished as soon as the snow melts on the four sites from last year and work will begin on five additional sites planned for this year. Fixed LIDAR has been installed at the snow lab and is working well. Supporting data collection flights are expected to start this month.

REAL-TIME DATA COLLECTION NETWORK

Coordination between NOAA, DWR, and Scripps continues as the 21st Century Extreme Precipitation Monitoring Project moves forward. A quarterly meeting was held on April 28th to discuss progress and plan the year three installations to take place this summer. Progress is being made on the data transfer protocol to take the observed data products from NOAA's Earth Systems Research Lab and distribute them to the National Weather Service and DWR's California Data Exchange Center (CDEC). Full implementation of the data transfer plan should be executed by the end of summer. A partnering opportunity related to the meso-scale atmospheric modeling has arisen with the United States Forest Service through its Firescope program. The Firescope program is interested in the observations and meso-scale modeling for fire-weather forecasting. An informational presentation was made at the May 2nd Firescope meeting. Increased visibility for the 21st Century Extreme Precipitation Monitoring Project is occurring through the FloodSAFE Focus newsletter.

SYSTEM RE-OPERATION

The consultant hired to assist in the System Re-Operation Study produced a draft study plan in April. The plan was reviewed and a meeting was held with the consultant to suggest changes, provide additional guidance, and clarify expectations. Gary Bardini, DFM Division Chief, and Kamyar Guivetchi, Acting Deputy Director, were also briefed on the project. A revised plan of study is expected by mid-May.

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.

FORECAST-COORDINATED OPERATIONS (F-CO)

DWR continues to conduct weekly coordination calls with USACE and operators of San Joaquin Valley reservoirs. San Joaquin River stages at Newman and Vernalis continue to recede due to a few factors: 1) a relatively dry month of April, 2) subdued snowmelt runoff due to a cool April and early May, and 3) an increase in irrigation demand absorbing the reservoir outflows. The San Joaquin flood control system of bypasses and levees is expected to continue to convey flood water out of the system to the Delta throughout the month of May. Coordination of reservoir releases will likely continue past the first week of June, when peak snowmelt runoff for the San Joaquin System reservoirs is likely to occur.

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 CENTER TRAINING AND EXERCISES

The Flood Operations Center (FOC) has completed a number of Flood Information Specialist (FIS) training classes for staff designated to assist in the FOC during exercises and activations. The training provided a brief summary of FOC Operations under SEMS/ICS, river and flood control systems, CA hydrology and geography, data resources including the California Data Exchange Center (CDEC) and National Weather Service (NWS), FIS duties, and procedures for direct response to public inquiries. Over 40 staff participated in these important classes.

Additional classes will be provided by the Flood Academy in the near future as the FIS positions are critical to maintaining a high level of FOC response during high water or flood emergencies.

The Flood Operations Center (FOC) has been preparing for the Golden Guardian 2011 Exercise. FOC Staff have been increasing their situational awareness by keeping up to date on current weather and hydrology briefings as well as any information coming in from various sources. The FOC has also been developing a standardized levee assessment tool to establish the levee threat level. In addition, the FOC has prepared Flood Information Specialist (FIS) Tools to aid in gathering information during emergency response incidents in order to disseminate information efficiently and in a timely manner. These tools have been installed in the Favorites Toolbar within Internet Explorer on the computers in the FOC and the Management Room.

FOC outreach activities during the last month included public comment workshops for the Flood Emergency Response Projects draft grant guidelines process. Six workshops were held in geographically diverse sections of the Central Valley with over 50 participants. Significant interest has already been demonstrated by local governments and levee maintaining agencies (LMA) in enhancing their flood emergency preparedness and response programs. A similar outreach program was conducted for the draft Flood Safety Plan template document, which can assist local governments and LMAs in meeting new requirements from AB 156. Three successful workshops were held in the Central Valley for this program. The proposed Grant Guidelines are posted on the FloodSAFE website with comments regarding the proposed grant guidelines due by June 6, 2011.

All FOC staff recently completed the ICS 300 (Intermediate ICS for Expanding Incidents) and ICS 400 (Advanced ICS Command and General Staff-Complex Incidents) training. The two courses required 40 hours of training.

On April 20, 2011, in preparation for the Golden Guardian 2011 Exercise, the Response and Security Section conducted an exercise to drill the Incident Command Teams (ICTs). The IT communications unit of the ICTs tested the satellite communications aspects of the Emergency Command Communications Trailers. The ICTs transferred forms and layers of data to the FOC server utilizing VPN access and/or FTP access. Other communication devices were also tested including satellite phones, IP phones, analog phones, the BGAN communication system and the radio system. Successful communication and data transfer from the ECCTs to the FOC is critical. The participants in this exercise learned techniques and protocols for emergency response to floods and other related emergencies. This type of training is essential and mission critical for emergency responders to be prepared in the event of an emergency during the flood season and throughout the year.

On May 11, 2011, the ICT teams participated in an exercise to mobilize the Emergency Command Communications Trailers. The exercise included practice in properly hitching the trailers to the trucks. The truck/trailer combo was then remotely mobilized by ICT designated drivers to ensure hauling the trailers would be successful for the Golden Guardian 2011 Exercise and future deployment, if necessary.

FLOOD EMERGENCY RESPONSE COORDINATION

Over the past month, the National Weather Service, California-Nevada River Forecast Center and Flood Operations Center have been providing operational briefings to FEMA Region 9. These briefings have been focused on the heavy snow pack, peak snow melt runoff predictions, potential high water and flood threats and advance measures being concerned or implemented. These briefings and briefing with other agencies have been well received. Additional agency coordination activities will continue until snow melt, high water, and flood threats are minimal in the San Joaquin and Tulare watersheds.

FLOOD FIGHT MATERIALS READINESS

As part of the FloodSAFE Flood ER program, DWR is developing a Flood Fight Materials Management Plan. This plan will provide specific locations, service life, maintenance, management, oversight procedures, and availability of flood fight materials pre-deployed throughout the State. This annually updated document includes storage locations, recent inventories, response times, and other pertinent information needed by the Flood Operations Center.

FLOOD SYSTEM ANALYSIS SECTION (FSAS)

Significant activities include continued support of the State-Federal FOC response to flood related incidents by providing situational information and coordinating additional site specific investigations by technical specialists. The FSAS continues to develop Levee Emergency Actions Plans and is preparing plans for specific sites of elevated concern. The purpose of the action plans is to assemble situational assessment information; critical contacts; and design, permitting, and contract information to expedite repairs should they become a part of the emergency response.

The Section continues to develop a systematic levee assessment tool that will utilize levee-related data being collected by DWR to assess relative vulnerability of the project levees within the Central Valley flood-control system. This assessment is made in support of the Flood Operations Center activities and will be performed by integrating information related to system performance, engineering evaluations, and operation and maintenance practices. Engineering staff have researched and identified potential data and sources of information. This tool will support the objectives of Function Area 1 (Emergency Response) by informing emergency response and resource planning decision makers. The tool will be used for the State-federal flood control system with the flexibility to expand valley and state wide.

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.

CENTRAL VALLEY HYDROLOGY STUDY (CVHS)

Significant accomplishments over last month include:

- Technical procedure documents have been finalized.
- USGS/Cornell/Corps have completed regional duration skew study with the report available in the near future.
- Internal review of the Reservoir/Hydrologic (HEC-ResSim) models is currently underway and will soon be ready for independent technical review.
- Estimation of local flows is completed and local flow analysis is nearly complete.
- Ungaged watershed delineation process is complete and rainfall-runoff model development is underway.
- Reservoir inflow hydrograph daily-to-hourly estimation and smoothing, and record augmentation is underway.
- Continuing internal coordination with USACE and hydraulic and hydrologic workgroups.
- Regulated channel routing model development is completed and unregulated channel routing model development is underway.

DELTA FLOOD PREPAREDNESS AND RESPONSE

The Regional Flood Preparedness Section (RFPS) continues to work directly with the USACE and the State Water Project Contractors to improve DWR readiness for a flood emergency in the Sacramento-San Joaquin Delta. DWR and USACE are each developing a Delta specific emergency response plan that recognizes the unique challenges in the Delta. The RFPS also briefed the South Bay Water Contractors at its quarterly water quality meeting on the progress of the DWR Delta Emergency Preparedness, Response and Recovery plan's development.

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.

- Channel clearing, tree trimming, and vegetation control is continuing using hand crews throughout the system.
- Fallen tree and debris removal is being conducted at MA-13, MA-05, MA-01, MA-03, and East Levee Sacramento River.
- Post high water debris removal is in progress at Willow Slough, Butte Slough Outfall Gates, and Weir 4.
- CCC crews are clearing and chipping brush in MA-07 and MA-05.
- Vegetation control spraying is underway, including fire guarding in all areas.
- The environmental restoration contractor for the Sycamore Creek Habitat Restoration Project will begin work at the site in late May or early June. Preparation and coordination for this work is ongoing. Minor earthwork is underway to re-establish the channel geometry for the Sycamore Creek Sediment Removal Project in advance of upcoming environmental restoration work.

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.

- Construction began on May 2 for replacement of Weir No. 2 to replace the existing weir and fish ladder with automated spillway gates and a full Ice-Harbor fish ladder for improved fish passage.
- The last phase of work to modernize the Sutter Bypass Pumping Plants Nos. 1, 2, & 3 began on April 24. The scope of work includes upgrading pumping plant control systems and installation of emergency electrical power backup generators at each plant. Construction is expected to be completed by October 2011.
- Final design for the rehabilitation of the Knights Landing Outfall Gates has been completed and staff is currently finalizing the environmental permits. Construction is scheduled to begin in May.

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.

- High water patrolling on a 24 hour basis for all DWR maintained levees concluded on May 4.
- In MA. 12, Sutter Yard placed 1400 tons of aggregate base on the levee crown and graded approximately 10 miles of crown roadway to ensure all-weather access.
- Mowing began on levee slopes.
- Rodent control program work resumed in all areas.
- Minor access gate repairs were made in various areas.
- Ongoing activities include debris removal and vegetation management.

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.

- Erosion repairs at three sites on the left bank of the Sacramento River in MA 9 (River Mile (RM) 36.8, 46.7, and 53.6) are planned for the 2011 construction season. Environmental permit applications are being submitted this month for repairs at RM 46.7 and RM 53.6. Applications for the site at RM 36.8 have been submitted and are under review by respective permitting agencies.
- Environmental permit applications are being submitted this month for the Knights Landing Outfall Gates Rehabilitation Project. Construction for this project is scheduled for summer/fall 2012.
- Environmental staff are conducting bird surveys in certain State maintained areas and coordinating with the Department of Fish and Game (DFG) to support the Sacramento and Sutter Maintenance Yards in starting routine maintenance earlier in the season under the expanded work windows negotiated in the January 2011 programmatic Streambed Alteration Agreement for routine maintenance between DWR and DFG.

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).

- Reclamation District 2064, SJRM 71.5R, Rock Slope Protection - On schedule for 2011 construction pending receipt of the Biological Opinion from NMFS and acceptance by USACE.
- Reclamation District 404, SJRM 42.3R, Slurry Wall - On schedule for 2011 construction pending completion of a "Work Agreement" followed by executing a DWR contract.
- Reclamation District 2063, San Joaquin River at RM 103.4, east bank, critical erosion site monitoring continues. Status remains as not being an imminent threat.
- Sacramento River RM 57.2 setback levee project construction was halted due to high ground water. Construction will resume, with the over excavation of the new setback levee foundation footprint, once the ground water table subsides. This is not expected to impact the construction completion date of fall 2011.

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).

DWR staff members received a partial grant award of \$212,065 from FEMA, and conducted a four-day class called “Managing Floodplain Development through the National Flood Insurance Program” in San Jose. They also provided 45 hours of technical assistance to community officials, engineers and surveyors, and homeowners. CRS program staff participated in two statewide CRS training classes - Community Rating System Basics and 2012 Community Rating System Changes – held during the last week of April in Roseville, Martinez, San Jose, and Santa Ana. The final DWR CRS website design was sent to the webmaster for uploading, with beta testing to begin 5/20/11. Staff also met with community representatives interested in starting regional CRS users groups.

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.

No new information.

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.

No new information.

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.

The first Urban Level of Flood Protection Criteria Work Group meeting was held on May 3. Attendees included representatives from cities and counties, professional planning associations, Central Valley Flood Protection Board, and State and federal agencies. Key items for discussion included introduction to the draft criteria. The Building Standards Code Update Project team is engaging with educational stakeholders in preparation for Code development and submittal to the California Building Standards Commission July 2012. In addition to outreach at major educational conference in February, a project team representative provided an update to the Northern Counties Educational Facilities Planners Group in April on the State's intention for 200-year Code development. Stakeholder input is being sought. County Office of Education staff, school district staff, and related design consultants were well represented. BSCUP staff is identifying how project goals are consistent with newly established CAL Green Building Codes and related high performance or "net zero" standards. On April 25, 2011, CalEMA notified the Floodplain Management (FPM) Branch that it was awarded a FEMA Hazard Mitigation Grant Program DR-1810 grant for our Hazards United States (HAZUS) pilot study project for Santa Barbara County. The total amount awarded was \$94,000, which will be disbursed over an 18-month study period. The federal grant amount funded is \$70,500 (75%), and DWR's non-federal match is \$23,500 (25%). The objective of this project is to use the HAZUS analysis to evaluate the "existing condition" of riverine flood risks along a specific river/area within Santa Barbara County, including identifying socioeconomic assets at risk from flooding and other potential losses. Also, the local Sacramento Valley Section of American Planning Association awarded the DWR-produced Handbook entitled "Implementing California Flood Legislation into Local Land Use Planning: A Handbook for Local Communities" its "Focused Issue Planning Award" citing the Handbook's "Good translation of complicated legal issues for compliance assistance."

FUNCTIONAL AREA 4 FLOOD PROJECTS & GRANTS

Flood Protection Projects and Grants is 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 State provided preliminary measures for USACE review. The alternative review meeting was held on May 6 to discuss comments on the State's locally preferred plan and review USACE prepared alternative measures.
- USACE has stated that funding for federal FY2011-12 will be appropriated toward the GRR.

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/Strathmore Creek in Tulare County.

- Project Management Plan (PMP) is at 40 percent completion and a scope of work has been developed. Further development of the PMP is dependent upon USACE internal budget approval to expend additional reconnaissance funding.

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.

- A draft amendment to the Feasibility Cost Sharing Agreement (FCSA) has been circulated by USACE and has been approved for legal content by the State and local agencies. This amendment (No. 2) will provide language to allow the State to accelerate funds in advance of USACE up to the non-federal sponsor cost share.
- NOAA-14 rainfall data is now available for the study. This data was on the study's critical path.
- The USACE geotechnical staff (District level) has reviewed fragility curves developed by Urban Levee Evaluations (ULE) for the Central Valley Flood Protection Plan and determined they did not meet USACE's requirements. Although the ULE fragility curves were developed in coordination with USACE, they are proposing developing their own fragility curves using the ULE data, which will add cost and cause the schedule to slip. This decision by USACE is significant, and DWR is setting meetings with them to determine the exact reason for their position. If USACE does not accept the ULE developed fragility curves, a precedent may be set that could affect how hydrology and hydraulics and other related technical efforts are accepted by USACE and cause additional tax dollars to be spent recreating them.

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.

- USACE is developing a work plan for District approval to continue efforts on the draft PMP and funding agreement among the Corps, State, and local sponsor agencies.

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.

- Staff is continuing efforts to determine State funds needed for Rock Creek (CAP Project) closeout.
- USACE is continuing the process of providing the State with a standard invoice for State review. USACE is still determining if there are carry-over funds available for federal FY2012.

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.

- In February 2011, this study was transferred from the ULE/NULE program to the USACE/CVFPB Studies Section.
- USACE has not moved the study forward because the accelerated Sutter Basin Feasibility Study is currently taking precedence. Sacramento River Flood Control System Evaluation and Sutter Basin Feasibility Study share the same USACE project manager.

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.

- The Sutter Basin Feasibility Study has been selected for inclusion in the USACE Pilot Program for accelerating feasibility studies.
- A meeting was held on March 29 to discuss the new scoping document for the accelerated study.
- USACE held a Risk Management Workshop on April 14 and 15 to focus on Risk Management issues for the Sutter Basin Project as well as assist the Project Development Team (PDT) in developing the Scoping Plan for the Sutter Pilot Study. The Scoping plan was outlined during the meeting with guidance from USACE HQ and the vertical team created to guide the PDT.
- A letter was prepared and sent to USACE indicating that the study needs to address alternatives in addition to full compliance with the ETL vegetation removal policy. Alternatives that should be considered in the study include application of vegetation policies similar to those agreed to by USACE in the California Levee Roundtable Flood System Improvement Agreement Framework, and the possibility of mature vegetation remaining on levee surfaces pursuant to a variance to the ETL policy if such a variance were to be issued by USACE.

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.

- Most of the Agency Technical Review (ATR) comments have come back for several of the disciplines and the team is working to complete the preliminary alternatives together for the F3 report. The alternatives section of the report will go to ATR and the non-federal sponsors in early May.

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.

- USACE is continuing development of the revised levee alignment by refining civil and hydraulic analysis which addresses geotechnical concerns with underseepage raised by soils exploration performed on the previously supported alignment.

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.

- Project Management Plan (PMP) is at 40 percent completion and a scope of work has been developed. Further development of PMP is dependent upon ongoing USACE internal budget approval to expend additional reconnaissance funding.

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 FCSA and LFCSA are being processed through the Contracts Office and should be fully executed by early May.
- There were no funds allocated under the USACE FY2012 Civil Works Budget for this study.

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.

- USACE is scheduling a teleconference to discuss the draft Policy and Guidance Memorandum.
- The non-federal sponsors submitted documentation for WRDA 1986 Section 103(1) and Section 104 in November 2010 but have not received a response from ASA (CW). This issue is affecting the current construction of the Marysville Ring Levee because USACE has stated that they will be requiring a payment of approximately \$5 million from the non-federal sponsors. If the non-federal sponsors receive an extension 103 deferral, the required payment will only be \$300,000. There is ongoing discussion between the non-federal sponsors, SPK, SPD, and ASA (CW) to prevent this invoice from being submitted.

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.

- USACE approval of the OMRR&R is still pending. LD-1 is moving forward with preparing documents for project closeout and is in contact with DWR about requirements.

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 setback levees.

- DWR and CVFPB continue to work with RD-17 to ensure compliance with all EIP and Board permit conditions.
- RD-17 is preparing to install piezometers required by DWR and CVFPB. There will be a three week bidding period, followed by piezometer installation.
- The Setback Levee Alternatives Report was reviewed by environmental staff.

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

The Feather River Levee Improvement Project (FRLIP) will offer 200-year flood event protection for both Highways 65 and 70. FRLIP will lower water surface elevations by 1.5 feet along the Feather River and the lower Yuba River benefiting the communities 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.

- Construction of the Vegetated Wave Buffer, Segment 2 is underway.

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

The Upper Yuba River Levee Improvement Project will complete a levee system designed to provide 200-year level of protection for 40,000 residents in South Yuba County.

- Section 104 credit approval is still pending from USACE. A Section 104 credit request must be approved prior to contract advertisement. The existing bid expired on March 30 and TRLIA was forced to rebid the Project.

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, underseepage, and raise the levee.

- SAFCA is compiling the necessary information to begin project closeout.

- SAFCA is working to complete their real estate contracts to allow for submittal of payments.

Sacramento Area Flood Control Agency - Capital Outlay (SAFCA-CO)

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, underseepage, and raise the levee. SAFCA plans to complete USACE Phase 4A along the Sacramento River in 2011 and have USACE complete the remainder. This is estimated to occur in 2014.

- Construction continues on Phases 1B, 2A and 2B, though at a greatly reduced “wet winter rate.”
- SAFCA has re-bid the Sacramento River East Levee Project and the bids were slightly higher than the original bid.
- Construction is currently underway on USACE Phase 4A.
- Staff recently completed paying invoices totaling \$18.88 million to SAFCA. Work continues on complex real estate reimbursement issues and invoice payments.

West Sacramento Area Flood Control Agency, Capital Outlay (WSAFCA-CO)

The CHP Academy, the Rivers and the I-Street Bridge projects are part of the North Area Plan and were selected to be completed under EIP. All three projects are designed to provide 200-year Level of protection for about 47,000 residents. The I-Street Bridge project was completed in November 2008. Plans and specifications are currently nearing completion for the CHP Academy and The Rivers projects. The two projects are scheduled for construction in June 2011 and are expected to be completed in December 2011.

No new information

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.

- The Mayhew project site is currently undergoing preparations for turnover to the local maintaining agency.
- Construction at Site R5 will begin in the 2011 construction season.
- The DWR Real Estate Branch is currently working on acquiring real estate certification from the State Lands Commission for the R5 staging area.
- The design of site R6 is in progress with R6 construction projected for the 2012 construction season.

Folsom Dam Raise and Bridge Element

The Folsom Dam Raise and Bridge Element Project provide Flood Damage Reduction and Dam Safety benefits to Sacramento.

- Off-site environmental mitigation is underway.
- USACE is currently working on preliminary design and a project management plan for the project.

Folsom Dam Modifications (Joint Federal Project)

The Folsom Dam Modifications Project (Folsom Dam Joint Federal Project) provides Flood Damage Reduction and Dam Safety benefits to Sacramento.

- The Blasting Plan has been accepted and the Contractor continues production drilling/blasting and excavation in the Control Structure area.
- Joint Agency task force meetings for optimization of the construction schedule are ongoing.

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.

- Construction for Phase 1 is set to begin in May.
- Weekly environmental bird surveys are underway to account for nesting hawks along the Phase 1 Project Footprint.
- The Phase 4 design is at 60 percent.
- The Phase 1A utilities issue involving relocation of a gas line and power pole owned by PG&E has been resolved through collaboration between USACE, MBK Engineers, DWR, CVFPB, Sprint, PG&E, and AT&T. Currently, relocation of the PG&E poles are ongoing with a slight delay in removal of a gas line caused by a nesting white tailed kite hawk in the immediate vicinity.

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.

- USACE conducted a preliminary transfer inspection of Area 1 (RD-1500) and found several issues at the original repair sites that must be addressed before the Supplemental O&M Manual can be delivered.
- The State will request USACE to perform a periodic inspection for RD-1500 to investigate several additional sites of concern outside of the original area authorized by the Mid-Valley Project.

South Sacramento Streams Project

The South Sacramento County Streams Project will increase the level of flood protection from 1-in-50-years 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.

- USACE has issued a letter requesting acquisition of easements from Union Pacific Rail Road (UPRR) with the intent of awarding a contract to construct a

floodwall along Morrison Creek and UPRR tracks by September 2011, with construction scheduled to begin in Spring 2012.

- Complications with right of way limitations on the Unionhouse Creek design and potential changes in design have slowed progress on that creek.
- Because the Project is changing to require a significant quantity of additional soil to be hauled to a waste disposal site, the Project environmental documents were reviewed to determine what additional documentation might be necessary to address the additional truck traffic and miles of truck travel.

West Sacramento Area Project, Slip Repair

- The Project has been advertised by USACE and is scheduled to be awarded June 1, with construction to start July 1.
- USACE should receive a partial payment by May 6 for the scheduled 2011 construction to keep the Project moving forward and on schedule. The remainder of the payment is being processed.

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.

- The 2010-11 Funding Cycle request for grant-funded project proposals closed on March 3. A total of 36 proposals were submitted. FCP staff members completed site visits and evaluations for all 36 proposals, with staff from other departments assisting. The next steps include meetings with all of the evaluators to finalize scoring and grant dollar amount recommendations, and review by DFM and FloodSAFE managers.
- Work has begun towards preparing funding agreements for the following projects: Ecosystem Restoration and Flood Attenuation on the San Joaquin River, and the Dos Rios Flood Control Project.
- Funding agreement amendments were approved by DFM and sent to Headquarters for final approval for the following projects: Middle Creek Flood Damage Reduction and Ecosystem Restoration project, and the Hamilton City Flood Damage Reduction and Ecosystem Restoration Project.

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.

- Staff is evaluating the current processes in an effort to improve program delivery.

- Staff is evaluating the State cost-share for Lower Mission Creek in Santa Barbara County.
- Three claims for \$3.5 million were completed.
- One new claim for \$328,000 was received this month.
- Eleven claims for \$26.7 million are under review.
- No audit payments were processed.
- No claims are in the process of payment.
- 50 claims for \$128 million are pending processing.

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.

- Contra Costa County's request for agreement amendment was approved and the documents are currently receiving management approval. The amendment will extend the term of the agreement, increase the overall grant amount, and update the project work plan, schedule, and budget.
- Humboldt County amendment to extend the contract term and an update to the Project's Work Plan was signed and executed.
- City of Oroville is currently obtaining City signatures for execution of a grant agreement for the Evaluation of the City of Oroville Levee.
- San Bernardino County submitted the Project Completion Report and Geotechnical Report for the Levee Certification and Modernization Project. These documents were reviewed and rejected by the DWR Project Manager. The DWR Project Manager is working closely with San Bernardino County to compile the appropriate documents necessary for project closure.
- City of Bakersfield submitted their Project Completion Report and Geotechnical Report for the Kern River Project. The submittal was approved and Project closeout and release of retention funds is being processed.
- Three Alameda County projects were closed and retention funds were released.
- The City of Fairfield Dan Wilson Creek Project was closed.

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 revised the 5-year work plan for YFFPP.
- The new Project Manager for YFFPP is William Wong.
- Staff uploaded the YFFPP into the Division's Program Funding Summary Sheet.

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

LLAP and FCSP are all in process of finalizing their program guidelines.

- Public comments on the LLAP Draft Guidelines were reviewed. A Response to Comments has been prepared. The LLAP Guidelines have been amended based on the efficacy of public comments received. The Project Solicitation Package (PSP) has been updated to reflect the next solicitation plans and amendments to the Guidelines. These documents have been sent for Office of Chief Counsel (OCC) review and management approval.
- EIP staff and support staff are either finished or nearing completion of the review of the EIP applications submitted for review. Director's Decision Memos are being prepared and circulated through DFM management for approval.

ENVIRONMENTAL SERVICES

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

- Activities are described under the individual project headings.
- The Eastside Bypass Mitigation Project received a report that the mitigation proposed by USFWS (fence construction in the San Joaquin River Channel) is infeasible because the resulting vegetation would cause a rise in water surface elevation that would encroach into the FEMA 3-foot required freeboard. USFWS responded with an alternative mitigation approach to enhance habitat within the San Luis Wildlife Refuge that would have no effect on floodwater conveyance or stage elevation.

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.

- A draft AB 1788 regulations package, including a DFM decision memo, were forwarded to DWR management for approval to send to the Office of Administrative Law (OAL). Form 399, Fiscal Impact Statement, is also part of the regulations package and has been reviewed and signed by DWR economists.
- Staff directed completion of Phase I of The DFM Desk Reference Manual/Intranet Website Project which includes development of subject matter components for the Budget Process, SAP Reporting, Bond Accountability and Project Management Basics. Training for 60 DFM staff was also completed.
- LLAP staff has provided technical support for the review of flood risk and flood damage reduction benefits of potential projects for Flood Corridor Section. Staff attended site visits throughout the State and will attend consensus team meetings in the coming month.

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 60 joint levee inspections and received DFG approval for 53 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. To date, 53 reimbursements have been paid totaling \$7.4 million.

Work Agreements for FY 2010-2011

- DWR staff has mailed work agreements to 68 reclamation district and has received signed work agreements from 56 reclamation districts. An additional four work agreements have been received since the April CVFPB meeting.
- The agreements will be finalized once signed by the Board's Executive Officer.

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.

- No relevant significant changes since April 2011.

More and 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.

Geotechnical Evaluation Reports			
Study Area	% Complete	Study Area	% Complete
Chico	31	NEMDC East	40
Marysville	40	Natomas	15
Sutter	35	Bear Creek	25
RD 784	40	Calaveras River	25
Davis	10	RD 404	37
Woodland	10	RD 17	50
American River	40	Stockton Non-Project	28
West Sacramento	89	W. Sac. Non-Project	12
Sacramento River	45	South Sac. Streams	11

Changes shown in bold.

- Overall, ULE is 68% complete.
- The draft West Sacramento GER, the template for all GERs will be presented for review and comment at the Independent Consulting Board meeting in May.
- No drilling activities occurred during this reporting period.
- Schedules for completion of the Geotechnical Evaluation Reports (GERs) Program are being prepared with the current delivery date of the GERs scheduled for the end of 2012.
- Most ULE efforts for the reporting period have been for planning the GERs noted above and in support of the CVFPP.

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 41% complete.
- At the Independent Consulting Board meeting in May, updates on the Geotechnical Assessment Report (GAR), Remedial Alternatives and Cost Estimates Report (RACER), and Geotechnical Data Report (GDR) will be presented. The approach to the Geotechnical Overview Reports (GORs) will also be presented for review and comment.
- No drilling activities occurred during this reporting period but field work is anticipated to resume in late May or early June.
- Schedules for completion of the GORs are being prepared with the current delivery date of the GORs scheduled for the end of 2012.
- The GAR is currently being finalized.

TECHNICAL REVIEW

Geotechnical analyses are being conducting 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 RD 17, SAFCA (AR Common Features), and Sutter Butte Area Flood Control Agency. ULE staff participated in BOSC meetings during April for SBFCA.

TECHNICAL POLICY

A statewide seismic policy is being developed for levee performance, emergency levee remediation, and long-term levee remediation. Interim Levee Design Criteria (ILDC) 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.

- Urban Levee Design Criteria Version 5 meetings occurred in April with additional meetings planned for May.
- Vegetation management policies and research continues.

Staff continues to support development of policy papers and technical data for the CVFPP and participate in various FAXCT (Functional Area Cross Coordination Teams).

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 includes two major upcoming deliverables: 1) Flood Control Systems Status Report (FCSSR) and 2) Living with Risk: California and Flood Protection in the Central Valley, 1848-2007 Report (History Report).

- FCSSR – An Administrative Working Draft of the FCSSR was provided to local SPFC maintaining agencies and several other flood control interests in the Central Valley for review in January 2011. Efforts continue to coordinate responses with those entities that made comments on the administrative draft document and revise the report. A public review draft of the FCSSR is scheduled for release this summer.
- History Report - An administrative draft of the history document for DWR and Board review is scheduled for this fall with a public review draft scheduled for release in early 2012.

CENTRAL VALLEY FLOOD PROTECTION PLAN (CVFPP)

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

- Management actions developed in Phase 2 are being refined and assembled into three alternative approaches for qualitative comparison. Findings from comparing these approaches will be used to formulate the State System-wide Investment Approach which will be the basis for the recommended plan in the 2012 CVFPP.
- Several major sections of the draft Program Environmental Impact Report have been prepared and are under review and revision by the CVFPP Product Delivery Team.
- Web based briefings (Webinars) on the status of the CVFPP were conducted on May 4 and 5. The briefings included discussions on work completed since the Valley-wide Forum in December 2010 and future actions. The briefings also provided an overview of the evolving technical analysis and plan formulation

approaches for the CVFPP, including CEQA environmental review and the process proposed for coordination with partner agencies and the public through plan completion. The recorded Webinar can be viewed on the CVFMP website at:

<http://www.water.ca.gov/cvfmp>.

- Two workshops covering a number of technical evaluations on the CVFPP are scheduled for early June in Sacramento and Stockton. Pertinent information about the dates, times, and content of the workshops is available on the CVFMP website listed above.
- The CVFPP Product Delivery Team reviewed a draft of the USACE's Project Management Plan (PMP) for continued efforts on the Central Valley Integrated Flood Management Study (CVIFMS). This PMP presents a five year scope of work for aligning development of the CVIFMS with the 2017 CVFPP update. The CVIFMS is a Federal/State cost shared feasibility level investigation to complement the CVFPP and support development of an implementation strategy for system-wide flood management in the Central Valley.

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 and 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 major work product is a report titled "Recommendations for Improving and Sustaining Integrated Flood Management in California" (Recommendations Report). In addition, SFMP includes integration of flood-related information into the California Water Plan.

No new information.

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.

REGIONAL CONSERVATION PLANNING

Regional Advanced Mitigation Planning (RAMP)

- The first draft of the RAMP Statewide Framework has been circulated for a 30-day review period, and DWR's consultant will be making a summary of all comments provided. The report identifies key planning components, regulatory issues, funding, and future guidance. Briefings are planned for management and Deputy Directors to discuss policy issues relating to the comments.

- Briefings were provided on RAMP to DWR's Regional Coordinators. A summary of RAMP for CVFPP is in production and will be circulated for management review.
- The RAMP collaboration portal was made active and has content available. External users can now see some documents, a calendar, and blog entries at: <https://rampcalifornia.water.ca.gov>.

Corridor Management Planning

- Staff continues collaboration with DFM to develop the Lower Feather River Corridor Management Plan. Recent activities include finalizing Phase 2 Task Order language. Phase 2 deliverables include a Draft Corridor Management Plan, permitting strategy, and hydrologic modeling. Staff is currently working on a project description to support these efforts.

SCIENTIFIC AND PLANNING INFORMATION

- Staff continued development of reports which will provide baseline ecological information for the Conservation Strategy, CVFPP, and CEQA document preparation. Reports in development include: 1) Biological Status and Trends Report, 2) Fish Passage Barriers Assessment, 3) summary of Habitat Conservation Objectives from Overlapping Plans, and 4) Fish Passage Barriers Assessment. Technical memorandums are in progress for selected reports.
- The medium-scale riparian vegetation map continues to progress to completion. The majority of the project area mapping is complete, with field accuracy assessment for project area still remaining. The new RHJV coordinator is assembling a workplan for interagency outreach and discussion of findings.
- Staff is assembling Interagency Agreement with agency partners for a fine-scale (high resolution) riparian vegetation map. Field teams plan to start in July 2011, with the final product expected in 2013.

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.

COMMUNICATION AND BRIEFING MATERIALS

While each functional area will conduct some of its own coordination and outreach on individual programs, the Communication element of area 7 provides assistance and support to ensure consistency. Communications and coordination take place internally, as well as externally with partner agencies on various aspects of the FloodSAFE program; including status updates, achievements and accomplishments, and upcoming milestones, with frequency ranging from weeks to years.

No new information.

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.

In April, DWR submitted 2011 Water Resources Development Act (WRDA) requests to the offices of Senators Boxer and Feinstein for the following program and projects:

- Central Valley Flood Protection and Water Resources Program (DWR's proposal for a regional crediting and reimbursement program)
- American River Common Features (Natomas Basin Post Authorization Change Report)
- South Sacramento County Streams (902 increase)
- Yuba River Basin (General Reevaluation Report)

LEGISLATION LIAISON & LEGAL

The Legislature is a key player in the implementation of the FloodSAFE initiative. Effective communication and reporting of plans and progress will aid the Legislature in funding flood management activities and with direction for future implementation. This element will also address legal issues that need to be resolved for progression of the FloodSAFE initiative.

No new information.

PROGRAM MANAGEMENT, BUDGET, & FISCAL SERVICES

DWR is accountable for efficient management and expenditure of State funds. Preparing bond budgets and tracking of bond expenditures is essential to document investments of taxpayer dollars. This element provides overall management support to the other functional areas, including program management activities, strategic and implementation plans, detailed budget preparation, and contracts, funds and invoice tracking.

No new information.

FLOODSAFE PROGRAM ADMINISTRATION & COORDINATION SERVICES

This element includes all administrative and coordination work required for FloodSAFE implementation, including human resources activities, policy document review, and FloodSAFE governance activities, including managing working groups and coordination teams within DFM and DWR.

No new information.