

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

By

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

*Prepared for the Central Valley Flood Protection Board for March 28, 2014 meeting.

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

Section staff has started spring levee inspections. Inspections are scheduled to be complete by the end of May. Section staff continues working on Central Valley Flood Protection Board inspecting and coordinating encroachment permits. The Encroachment Permit database continues to be updated while the Levee Log database consolidated work has been completed. Plans are being made to field verify the levee log data. Section staff continues to coordinate with DWR, USACE, CVFPB, and LMA staff in a number of venues and have been participating in meetings regarding rodent abatement, Regional Plans, and Unacceptable Vegetation.

FLOOD PROJECT INTEGRITY/VULNERABILITY ASSESSMENT ACTIVITIES

Utility Crossing Inventory Program (UCIP) has completed desk studies for about 1600 miles of the SPFC levees. These desk studies entailed extensive review of historical information such as CVFPB encroachment permits, DWR Levee Logs, Local Maintaining Agency's (LMA) records, and USACE Operation and Maintenance Manuals to identify location and characteristics of pipes. About 7500 penetrations through the SPFC levees were identified during these desk studies. UCIP is currently performing field surveys to verify locations and document the existing condition of these pipes based on external visual inspection. Field surveys have been completed for about 1200 miles of levees and approximately 5500 penetrations.

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

Staff completed the mailings of all the *Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System (2013 version)*. Staff started working with CDEC staff to formulate a structure in the LMA web application to enable LMAs to submit information on their Non-Project Levees (NPL). This functionality will be applicable to the LMAs who maintain NPL. This will be

available to the LMAs by summer and LMAs will be expected to use this functionality to report on their NPL starting in the 2014 reporting season. Staff continues to work on High Water Staking (HWS) data and investigating an appropriate location to store the data. Currently California Levee Database shows promise to store the currently available DWR HWS data. Staff is also working in Drought team as an agency representative at State Operations Center in Mather Field.

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 January 31, statewide hydrologic conditions were as follows: precipitation, 20 percent of average to date; runoff, 15 percent of average to date; snow water equivalent, 15 percent of average for the date (10 percent of the April 1 average); and reservoir storage, 65 percent of average for the date. Sacramento River Region unimpaired runoff, for Water Year 2014, observed through January 31, 2014 was about 1.4 million acre-feet (MAF), which is about 24 percent of average. In comparison to Water Year 2013, the observed Sacramento River Region unimpaired runoff through January 31, 2013 was about 5.9 MAF, or about 105 percent of average.

On January 31, the Northern Sierra 8-Station Precipitation Index Water Year total was 4.5 inches, which is about 17 percent of the seasonal average to date and 9 percent of an average water year (50.0 inches). During January, the total precipitation for the 8-Stations was 1.2 inches, or about 13 percent of average for the month. Last year on January 31, the Water Year 2013 seasonal total for the 8-Stations was 34.3 inches, or about 128 percent of average. The combined total October through January precipitation, in Water Year 2014, is the driest in about 90 years of record.

On January 31, the San Joaquin 5-Station Precipitation Index Water Year total was 4.7 inches, which is about 23 percent of the seasonal average to date and 12 percent of an average water year (40.8 inches). During January, the total precipitation for the 5-Stations was 1.7 inches, or about 22 percent of average for the month. Last year on January 31, the Water Year 2013 seasonal total for the 5-Stations was 20.4 inches, or about 99 percent of average. The combined total October through January precipitation, in Water Year 2014, is the third driest in about 90 years of record.

Selected Cities Precipitation Accumulation as of 01/31/2014 (National Weather Service Water Year: July through June)					
City	July 1 to Date 2013 – 2014 (in inches)	% Average	July 1 to Date 2012 – 2013 (in inches)	% Average	% Avg "Water Year" July 1 to June 30 2013 - 2014
Eureka	6.47	27	23.40	99	16
Redding	3.92	20	20.09	102	11
Sacramento	2.05	20	12.25	119	11
San Francisco	2.14	16	13.59	100	9
Fresno	1.30	22	3.97	68	11
Bakersfield	1.19	37	1.62	50	18
Los Angeles	1.04	15	5.58	83	8
San Diego	2.25	43	4.38	83	22

Key Reservoir Storage (1,000 AF) as of 01/31/2014								
Reservoir	River	Storage	Average Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,730	1,730	67	2,448	47	---	1,286
Shasta Lake	Sacramento	3,072	3,072	54	4,552	36	-2,179	2,896
Lake Oroville	Feather	2,317	2,317	54	3,538	36	-1,901	2,276
New Bullards Bar Res	Yuba	584	584	69	966	42	-392	562
Folsom Lake	American	508	508	32	977	17	-413	813
New Melones Res	Stanislaus	1,423	1,423	73	2,420	43	-924	1,374
Don Pedro Res	Tuolumne	1,391	1,391	75	2,030	51	-646	986
Lake McClure	Merced	489	489	45	1,025	21	-456	807
Millerton Lake	San Joaquin	333	333	59	520	38	-239	324
Pine Flat Res	Kings	470	470	37	1,000	18	-498	824
Isabella	Kern	173	173	34	568	10	-112	510
San Luis Res	(Offstream)	1,607	1,607	38	2,039	30	---	1,423

The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for February 2014, issued January 31, 2014, suggests below average rainfall for most of California, except the northern third of the State, where average precipitation is indicated.

HYDRO-CLIMATE ANALYSES

No new information this month.

REAL-TIME DATA COLLECTION NETWORK

No new information this month.

HYDROLOGIC DATA MANAGEMENT

No new information this month.

BULLETIN 120 AND WATER SUPPLY INDEX FORECASTS

No new information this month.

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

No new information this month.

RIVER FORECASTING

No new information this month.

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

No new information this month.

OUTREACH

No new information this month.

FLOOD SYSTEM ANALYSIS SECTION (FSAS)

Staff continues to gather information related to the condition of the State-federal flood control system and keep that information in an accessible format for the FOC.

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)

No new information this month.

HYDRAULIC ANALYSIS AND EVALUATION

In February 2014 the Hydraulic Analysis Section (HAS) continued to manage the remaining hydraulic model development work under the CVFED program. The combined riverine and overland flow hydraulic models for the Upper and Lower Sacramento River System are 100% and 100% completed, respectively; and for the Upper and Lower San Joaquin River System 99% and 100%, respectively. In parallel the section has also been working on activities related to the development of applications and tools using CVFED models and data to support FloodSAFE program. The CVFED combined channel model enhancement and expansion is underway to support FOC and other FloodER programs. In addition HAS continued to plan, scope, design and implement geospatial tools and applications for CVFED data management including inventory, update, visualization and dissemination of CVFED program data and tools for FloodSAFE programs and DWR partner agencies.

Following the deliveries of the ULOP 200-year Informational Floodplain Maps (SB 1278 and AB 1965) for urban communities in July 2013, we continued to respond to communities and legislators regarding maps, model and data requests related to the 200-year informational maps during the month of February.

In this month HAS continued to populate the Library of Models (LOM) with CVFED models as they are completed and approved. Approximately sixty percent of the comprehensive riverine and over land flow hydraulic models corresponding to the CVFED program are populated in LOM.

In this month, HAS processed two requests for data and transferred a total of 11,362 LIDAR tiles and 42,502 tiles of Aerial Imagery. One of these requests also included bathymetric and field survey data. Both requests were from outside public agencies. Approximately 3,225 GB of data were transferred covering a land area of approximately 10,190 square miles.

FUNCTIONAL AREA 2 OPERATION AND MAINTENANCE

Operation and maintenance is a functional area under FloodSAFE established to ensure project facilities are operated and maintained in good working condition. DFM's Flood Maintenance Office (FMO) has responsibility for operation and maintenance of the Sacramento River Flood Control Project as outlined in California Water Code sections 8361 and 12878. Routine operation and maintenance is performed by the Sacramento and Sutter Maintenance Yards (Yards). Outside contractors are sometimes given responsibility for non-routine operation and maintenance. Funding from FloodSAFE has expanded the program by providing additional funding for deferred maintenance and for new projects identified through a number of inspection programs. FMO also provides funds to share costs with the federal government and with local maintaining agencies for repair projects.

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 Functional Area 2. DWR works to conduct operation and maintenance in a manner that supports public safety while protecting, and where possible, enhancing the environment. As such, environmental stewardship is integrated into 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 together and develop integrated solutions to complex environmental compliance requirements and resource opportunities as flood control maintenance activities are undertaken.

FLOOD SYSTEM PREPAREDNESS













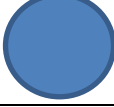
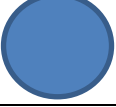
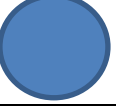

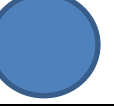
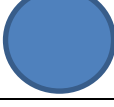

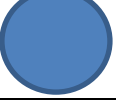


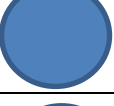


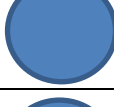
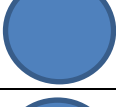

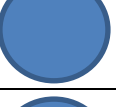

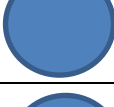
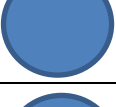
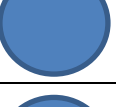
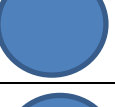


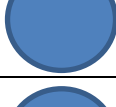

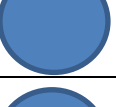
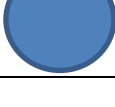

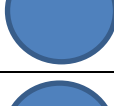

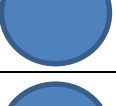
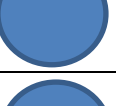

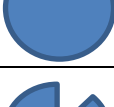
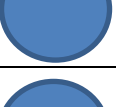
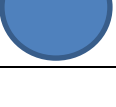
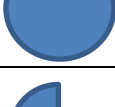






Routine maintenance of project facilities is an essential component of Flood System Preparedness and is conducted by the Yards. Routine annual maintenance of project levees, channels, and flood control facilities begins in March and continues until the beginning of the flood season in October. The project's operation and maintenance manuals and the criteria for evaluating maintenance practices developed by the United States Army Corps of Engineers (USACE) serve as a guide for establishing maintenance practices. The Yards focus on completing all routine maintenance activities (including repair of damage caused by previous flood season's high water events) and having adequate flood fighting supplies on hand before the onset of the next flood season.

LEVEE MAINTENANCE

Maintenance of levees includes: mowing levees and managing vegetation to maintain visibility and accessibility for flood fighting, filling rodent holes, inspecting and repairing pipe penetrations, keeping levee crown roads in good condition, repairing damaged gates, and repairing slumping or eroded levee sections. Levees are inspected four times per year.

- The maintenance area formation on Cache Creek is underway with the completion of the flood benefit map prepared by Wood Rogers. DWR will meet with Yolo County and the City of Woodland to prepare for a public meeting that will likely occur in April 2014.
- Levee maintenance is mostly complete for the year. Most of the work that occurred last month was reapplication of herbicides and some road grading.

- Rodent hole grouting was limited this year due to trouble acquiring permits from the California Department of Fish and Wildlife. The few areas that received authorization are complete.
- The following figure shows the status of routine maintenance activities.

Maintenance Activities completed for Fiscal year 2013-2014						
	Vegetation Control	Rodent Grouting	Encroachment Removal	Levee Restoration	Levee Road	Minor Structures
MA 1						
MA 3						
MA 4		N/A				
MA 5		N/A				
MA 7		N/A		N/A	N/A	
MA 9					N/A	
MA 12			N/A			
MA 13						
MA 16					N/A	
MA 17		N/A				
WC 8361 State maintained				N/A		

N/A = not applicable

CHANNEL MAINTENANCE

Channels are maintained to convey the design flood flow by removing and thinning vegetation, and by removing accumulated debris and sediment as necessary. Hydraulic models are developed and applied to analyze channel flow capacity and identify critical areas within channels where vegetation or sediment needs to be removed to maintain channel capacity. As the models are completed, channel specific management plans are developed to support on-going maintenance activities in the channel. Approximately 20 percent of the project channels will be modeled every year with priority given to channels with suspected deficiencies and every channel will be modeled no less than every 5 years.

- Channel maintenance is about 90% complete with respect to mowing, vegetation removal, and spraying. The dry winter has allowed for more work to be completed than originally planned.
- American River Channel Management – Developed GIS shape files that show areas of historic maintenance by DWR. Extracting assumed vegetation types and corresponding roughness values for these areas from 2-D model grid developed for USACE by Atkins to determine how modeled values compare to current conditions and if the existing model can be used for channel evaluation by DWR.
- Butte Creek Hydraulic Model - No new information this month.
- Cherokee Canal Hydraulic Model - No new information this month.
- Chico Area Streams Hydraulic Model – DWR’s Northern Region Office (NRO) has completed model revisions to incorporate comments from CVFED and FMO and rerun the model. A revised Draft report incorporating revised model results has been completed and will be reviewed in March.
- Linda and Arcade Creek Hydraulic Model – No new information this month.
- Natomas Cross Channel (NCC) Hydraulic Model – No new information this month.
- East Side Canal (aka Coon Creek Interceptor) – Attempted to obtain copies of As-Built drawings for several bridges that cross the East Side Canal from Yolo County, Caltrans, and MBK (consultant for LMA responsible for levee maintenance) where possible sediment and/or scour problems were identified during our February field visit, but As-Built drawings are not available. Caltrans inspection’s report indicates that scour has occurred at several of the bridge pilings. Currently using USACE design drawings to evaluate cross-sections downstream of the bridges to determine if sediment has accumulated in the areas.
- Natomas East Main Drainage Canal (NEMDC) - No new information this month.
- Putah Creek Hydraulic Model – No new information this month.
- Tisdale Bypass Hydraulic Model – Model sent to DWR’s NRO for QA/QC review.
- Wadsworth Canal Hydraulic Model – No new information this month.

FLOOD CONTROL FACILITIES MAINTENANCE

DWR operates and maintains flood control structures such as weirs, pumping plants, fish ladders, and bridges. Routine activities, such as maintaining electrical and mechanical systems, removing debris from intakes, and inspecting facilities for deterioration, are performed so the facilities are ready for operation.

- Facility maintenance is complete for the calendar year.

MAINTENANCE YARD FLOOD SEASON PREPAREDNESS

The Yards serve as first responders for State-operated Maintenance Areas (MA) and those areas where the State Legislature has given DWR levee maintenance responsibilities. By October, the Yards prepare for the next flood season by: restocking flood fighting supplies, conducting flood fight training that is needed for new staff, preparing schedules for high water patrolling or staking that may be conducted during the forthcoming flood season, inspecting and repairing communication equipment, and coordinating flood fighting activities with DWR's Flood Operations Center.

Sacramento Maintenance Yard

- No new information this month.

Emergency Response

The Yards, when requested, respond to flood events as first responders in areas where they have maintenance responsibilities. They also provide support to other locally maintained areas for flood fighting when requested.

- No new information this month.

CENTRAL VALLEY FLOOD PROTECTION PLAN (CVFPP) – IMPLEMENTATION

In addition to the routine maintenance described above, FMO is using FloodSAFE bond funds to complete deferred non-routine maintenance projects (such as rehabilitation of pumping plants), and rehabilitation and repair of system facilities (such as removing accumulated channel sediment and repairing major levee and bank erosions sites). The CVFPP identified several near-term priority actions that are being implemented including: development of rural levee repair criteria, proactive erosion repair and stabilization, risk-prioritized repair of critical system problems, rehabilitation and maintenance of all-weather levee access roads, and participation in federal levee repair programs. Implementation of the rural levee projects will be consistent with the State System-wide Investment Approach (SSIA).

LEVEE REHABILITATION AND REPAIR

FMO is supporting the rehabilitation and repair of levees through a variety of cost-share programs with the federal government and local maintaining agencies. A key program for providing local cost-share assistance in rural/agricultural areas is the Flood System Repair Project (FSRP) that repairs critical damage to flood control facilities. The State, in collaboration with the Central Valley Flood Protection Board (CVFPB) and members of the flood control community, is also developing the Rural Levee Repair Guidelines (RLRG) to provide guidance for repairs of smaller-scale levee deficiencies in rural/agricultural areas. Once developed, these criteria may be applied to repairs conducted under the FSRP.

Small Erosion Repair Program (SERP)

- DWR certified the Program Environmental Impact Report and approved the SERP program on February 13, 2014. The CVFPB staff has tentatively scheduled approval of its CEQA findings for SERP at the March 2014 Board meeting.

- Permits and authorizations are anticipated to be completed this year by June. Maintenance Support Branch staff, in collaboration with the Maintenance Environmental Support Branch, is preparing to implement SERP and has identified 11 small erosion sites within the Phase 1 SERP coverage area as potential SERP sites. The sites are located on the Wadsworth Canal, Colusa Basin Drainage Canal, Willow Slough Bypass, and the left bank of the Sacramento River just north of the Colusa Bypass.

Flood System Repair Project (FSRP)

- To date, the Flood System Sustainability Branch has received Letters of Intent (LOIs) from 15 Levee Maintaining Agencies in the Sacramento and San Joaquin River Systems. These LOIs indicate that the LMA has received FSRP critical sites information and pre-feasibility cost estimates, and is interested in developing project agreements for cost-shared levee repair and access road gravelling projects under the FSRP program.

Rural Levee Repair Guidelines (RLRG)

- No new information this month.

Sacramento River Bank Protection Project

- No new information this month.

PL 84-99

- No new information this month.

CHANNELS – CORRIDOR MANAGEMENT STRATEGY (CMS)

CMS is a concept for planning, designing, and implementing projects for flood control features that DWR has responsibility for maintaining and repairing. It incorporates DWR's environmental stewardship and sustainability policies, and involves developing a vision, strategy, and Corridor Management Plan (CMP) for managing corridors that integrate public safety, environmental stewardship, and economic stability over a long-term (greater than 30 years) planning horizon. CMPs are a foundation for securing programmatic regulatory agency approvals for on-going maintenance activities and habitat restoration. CMPs effectively support the objectives of the CVFPP and Conservation Framework in establishing an integrated management plan to reduce flood risk, improve ecosystem function, and create a more sustainable flood management system that allows for on-going operation and maintenance of flood management facilities.

Lower Feather River Corridor Management Plan (LFRCMP)

- Comments to the draft administrative LFRCMP and appendices were submitted by the DWR review team to AECOM (the primary support services contractor) in mid-January. The LFRCMP is currently being revised by AECOM. The revised LFRCMP should be ready to distribute to the DWR CMP management team by the end of March 2014.

Willow Slough Bypass Channel Rehabilitation Project

- No new information this month.

Flood Control Facilities – Rehabilitation and Repair

DWR repairs or replaces flood control structures that are part of DWR responsibilities within the Sacramento River Flood Control Project. These facilities include weirs, pumping plants, fish ladders, outfall gates, and bridges.

Butte Slough Outfall Gates (BSOG)

- The final BSOG Overwater Drilling report, summarizing results from work conducted last fall, was delivered to FMO. Findings from the report will be incorporated into design, CEQA and permitting efforts. The BSOG rehabilitation project description was finalized so staff could begin working on the CEQA analyses and document.

Sutter Bypass East Borrow Canal – Weir No. 2

- No new information this month.

Pumping Plants

- Pumping Plant testing is on-going.

FUNCTIONAL AREA 3 FLOODPLAIN RISK MANAGEMENT

The primary purpose of Floodplain Risk Management is to empower local communities through floodplain management program support and technical assistance to make wise land use decisions in flood prone areas that result in reduced flood risk and preservation of the beneficial uses of floodplains. FPM projects and programs work towards development of a statewide integrated approach for flood risk reduction and long term floodplain sustainability that reduces loss of life and property damage and minimizes the economic impacts associated with flooding.

FLOODPLAIN MANAGEMENT ASSISTANCE

Floodplain Management Assistance provides statewide technical support to federal, state and local agencies, and the public for flood hazard maps, levee data, and the National Flood Insurance Program activities including the Community Rating System (CRS). As part of the NFIP Community Assistance Program (CAP) grant-partnership with the Federal Emergency Management Agency (FEMA), DWR conducts audits with communities participating in the NFIP, provides technical assistance to the public, and trains community officials.

- No new information this month.

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.

Coastal Floodplain Evaluation and Delineation (CFED)

The Coastal Data Merge Project is a collaborative effort with the Ocean Protection Council (OPC) with the purpose of merging coastal California's topographic/bathymetric data into one formatted data set to provide a consistent application for the entire coast of California. Current status of the project:

- No new information this month.

Alluvial Fan Floodplain Evaluation and Delineation (AFFED)

The AFFED project team reconvenes, when requested, to develop flood models and preliminary flood hazard delineation maps for California communities. Currently, there are no active AFFED projects.

- No new information this month.

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 this month.

FLOOD RISK NOTIFICATION

Flood Risk Notification focuses on communicating flood risk and risk mitigation strategies to the public and to local, state and federal agencies for areas protected by the facilities of the State Plan of Flood Control.

- No new information this month.

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 creation of integrated planning approaches and datasets that help agencies, communities, and individuals make well informed decisions.

- No new information this month.

FUNCTIONAL AREA 4 FLOOD PROJECTS & GRANTS

Flood Protection Projects and Projects Grants has been a long-standing California Department of Water Resources (DWR) base program, and is expected to continue indefinitely, because of the ongoing need for system improvements and the long-lead time to implement federal flood control projects. The program is responsible for the majority of physical improvements to the flood management system and provides grant money in the Delta and Statewide. The State acknowledges the program need by continuing to be a significant partner in viable flood management projects in the Central Valley, Delta, and Statewide.

USACE/CVFPB PROJECTS

The Central Valley Flood Protection Board (CVFPB) continues to participate with the U.S. Army Corps of Engineers (USACE) on project non-federal cost-share funding to upgrade the Central Valley's State-federal flood management.

American River Common Features (ARCF) Project

The ARCF project is improving the levee system along the American and Sacramento rivers.

- The construction of sites L9/L9A is complete.
- The non-federal sponsors and USACE are currently negotiating the award for fiscal year (FY) 14 construction projects, including R3A, L10, L7, and R7. The design is at 90% for the Northeast Main Drain Canal (NEMDC) North Extension site with FY 14 award planned for June 2014. The NEMDC North contract has been awarded.
- Relocation of SMUD utilities at the NEMDC North site is ongoing.
- USACE has requested a non-federal payment of \$6.5M to match the money in the Federal Omnibus Bill work plan.

ARCF – Natomas Basin

The Natomas Basin Project is pending authorization in Congress in Water Resources Development Act (WRDA) 2013 and includes significant improvements to the levees along the southern and eastern boundaries of the basin to improve flood protection to modern engineering standards.

- The U.S. Senate and House continue negotiations over the WRDA S. 601 and WRDA HR 3080 bills in congress. Passage may occur in spring 2014 that would allow for work to proceed on the Natomas Basin project as soon as State funds or credit are available.

Folsom Dam Raise

The Folsom Dam Raise Project will provide flood damage reduction by increasing the reservoir storage capacity by 3.5 feet and performing structural modifications to the existing tainter gates for operational safety. In addition, improvements to the temperature shutters and ecosystem restoration along the lower American River will provide environmental benefits.

- No new information to report this month.

Folsom Dam Modifications Joint Federal Project (JFP)

The purpose of the Folsom Dam Modifications Project is to construct an auxiliary spillway at the Folsom Dam that will work in conjunction with the existing spillways to

help the Sacramento region achieve a 200-year flood protection level. The estimated completion for the JFP is October 2017.

- Construction and Design – The project status as of January 15, 2014, is as follows:

Phases	Planning & Design	Construction
Pre-construction Engineering and Design	100%	N/A
Phase III – Control Structure	100%	70%
Phase IV – Approach Channel, Chute, and Stilling Basin	100%	12%
Phase V – Site Restoration	19%	0%
Project Overall	90%	40%

- The contractor has placed 89,806 cubic yards of concrete equivalent to 84% of the control structure as of January 2014.
- The first truck of gate components for the control structure is scheduled to arrive the last week in February 2014 from Oregon. USACE is scheduling a media event for the gate arrival in late March. CVFPB and DWR are invited to the media event.

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

The Lake Kaweah Enlargement Project was completed in 2006, and the remaining administrative, financial, and turnover work is planned to be complete by September 2014.

- DWR staff is processing a contract amendment to incorporate the schedule and cost change request #3 into the agreement with USACE.

Marysville Ring Levee Improvement Project

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

- Phase 2A design is 60% complete with a construction award planned for the fall of 2014.
- Phase 2B design will begin in 2015.
- Phase 2C and 3 design is ongoing.

Mid-Valley Area Levee Reconstruction Project

The Sacramento River Flood Control System Evaluation – The Phase III Contract Area 3 Project is located near Knights Landing in east Yolo County, approximately 26 miles northwest of Sacramento. Contract area 3 includes levee reconstruction at sites 9, 10, and 11 planned along the Sacramento River. Sites 12, 12A, and 13 are planned along the Knights Landing ridge cut drainage canal.

- No new information to report this month.

South Sacramento Streams Project

The South Sacramento County Streams Project will increase the flood protection level for a portion of the south Sacramento County’s urbanized area and an area to the south and east of the city of Sacramento

- On February 4, 2014, City of Sacramento (City) staff met with City Council Member, Bonnie Pannell, and Sacramento County Supervisor, Jimmie Yee,

regarding the encroachments along Florin Creek. Several residential backyards have encroached by as much as 15 feet onto City property on the banks of Florin Creek that will need to be removed. Construction of the flood control improvements along Florin Creek is planned to start May 2015. Encroachment removal may be phased to allow time for residents and the City to work through any problems that may arise.

- U.S. Congresswoman Matsui's office held a press event at the Morrison Creek Floodwall on January 22, 2014. DWR, USACE, and SAFCA completed construction of this project on November 1, 2013. CVFPB President, Bill Edgar, was in attendance at the event.

West Sacramento Area Project, Slip Repair

The West Sacramento Slip Repair Project was completed in 2011 and is awaiting close-out by USACE. On September 4, 2013, Flood Projects Office staff made a request to the Project Leadership Board to provide the State with a schedule to complete project closeout and final accounting as soon as possible.

- No new information to report this month.

USACE/CVFPB STUDIES SECTION

The State, represented by the Central Valley Flood Protection Board (CVFPB), participates and provides cost-share for feasibility studies with USACE and local partners. Several studies are underway.

ARCF General Reevaluation Report (GRR) This study will provide a 200-year level of flood protection for the lower American River, downstream of the Folsom Dam, the Sacramento River (downstream of the Natomas Cross Canal), and the Natomas Cross Canal.

- USACE continues to address vegetation and access issues for the study. The non-federal sponsors have agreed to execute a local feasibility cost-share agreement (LFCSA) for the GRR. The feasibility cost-share agreement (FCSA) and LFCSA are anticipated to go before CVFPB on March 28, 2014. The LFCSA is anticipated to go before SAFCA's Board March 20, 2014.

Lower San Joaquin River Feasibility Study

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

- The Lower San Joaquin River Feasibility Study has experienced delays due to a disagreement between the non-federal sponsors and USACE on the applicability of Executive Order (EO) 11988 to the Reclamation District (RD-17) area; a significant area contained in the current study alternatives being considered. The local sponsor disagrees with the USACE interpretation and is advocating that RD-17 be included in the National Economic Plan and the ultimate Tentatively Selected Plan because RD-17 already includes substantial development and is not in the 100-year floodplain.

Merced County Streams Project-Bear Creek GRR

This project will evaluate options to increase the Merced urban area level of flood protection from a 50-year to 200-year event.

- Merced County has made a decision to move forward with the Merced GRR by funding completion of the project management plan (PMP). Completion of the PMP is estimated to be \$75,000 and will be paid completely by Merced County.

Rock Creek/Keefer Slough Feasibility Study

This study will generate an environmental impact statement/environmental impact report (EIS/EIR) and feasibility study to evaluate federal, State, and local interests in planning, designing, mitigating, and improving Rock Creek and Keefer Slough levee systems in Butte County.

- No new information this month

Sutter Basin Feasibility Study

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

- No new information this month.

West Sacramento GRR

The GRR is being conducted to study future work necessary to provide a minimum 200-year level of flood protection for the city of West Sacramento.

- USACE has provided a FCSA amendment requesting a total cost increase from \$5,700,000 to \$7,800,000 for the West Sacramento GRR. A resolution to the amendment to the FCSA is planned to go before CVFPB on March 28, 2014.

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.

- No new information 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.

- No new information this month.

Woodland/Lower Cache Creek Feasibility Study

This study is a State, USACE, and the City of Woodland coordinated effort to investigate feasible 200-year level flood protection and risk reduction alternatives and opportunities for floodplain restoration, recreational enhancements, and ecosystem restoration for the City of Woodland and surrounding areas. The study will continue efforts initiated during the original study which was suspended in 2004 due to significant local resistance to the USACE-selected flood barrier alternative.

- No new information this month.

Cache Creek Settling Basin

As a part of the federal authorization for the most recent improvements completed in 1993, the project authorization specified additional improvements to be considered at year 25 (2018) or when the sediment trapping efficiency falls below 30%.

- No new information this month.

Yuba River Basin Project GRR

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

- No new information this month.

CENTRAL VALLEY FLOOD PROJECTS

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

EIP PROJECTS

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

Knights Landing Levee Repair Project

This project will repair 3.4 miles of levee along the left (east) bank of the Knights Landing Ridge Cut back to the USACE 1957 Design Profile.

- No new information this month.

Levee District 1 (LD-1) – Setback Levee at Star Bend Feather River

LD-1 constructed a 3,400-foot-long setback levee at Star Bend near river mile (RM) 18.0 on the right bank of the Feather River to provide increased flood protection for Yuba City.

- No new information this month.

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

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

- No new information this month.

Three Rivers Levee Improvement Authority (TRLIA) – Feather River

This project will result in a 200-year flood protection level for Highway 65 and 70, and will also improve flood protection for Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes one of the largest setbacks west of the Mississippi River, and creates 1600 acres for on-site mitigation, agricultural use, and habitat.

- No new information this month.

TRLIA – Upper Yuba River

This project will result in a 200-year level of flood protection for Highway 65 and 70, and will also improve flood protection for Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes a portion of the Yuba River's south levee.

- No new information this month.

SAFCA – Natomas Cross Canal

This Natomas Levee Improvement Program project will install cutoff walls to prevent seepage, under-seepage, and raise the levee to improve the Natomas Basin's flood protection and create a 200-year minimum flood protection level.

- No new information this month.

SAFCA – Sacramento River East Levee

This Natomas Levee Improvement Program project will install cutoff walls to prevent seepage, under-seepage, and raise the levee to improve the Natomas Basin's flood protection and create a 200-year minimum flood protection level. SAFCA plans to complete components to element 12A (RM 67) along the Sacramento River and have USACE complete the remaining work.

- No new information this month.

SJAFCA – Smith Canal Closure Structure

The Smith Canal Closure Structure Project will construct an Obermeyer gate at the mouth of the Smith Canal on the San Joaquin River/Stockton Deep Water Ship Channel. The cost to design the structure is \$2,412,500.

- No new information this month.

West Sacramento Area Flood Control Agency (WSAFCA) – North and Southport Improvement

The California Highway Patrol Academy, Rivers, and I-Street Bridge projects are part of the North Area Plan. All construction is complete for these sites. These projects correct through-seepage and foundation under-seepage that have excessive hydraulic gradients, embankment instability, and erosion problems. All three projects are designed to provide a 200-year flood protection level for about 47,000 residents.

The Southport area project is being designed and may include a large setback levee. Public Review of the Draft EIS-EIR for the Southport setback levee was completed.

Sutter Butte Flood Control Agency (SBFCA) – Feather River West Levee Project (FRWLP)

FRWLP is designed to repair approximately 35 miles of levee along the west bank of the Feather River from the Thermalito Afterbay to the north end of Star Bend. The design will include slurry walls and seepage berms to protect Gridley, Biggs, Live Oak, Yuba City, and parts of Sutter and Butte counties. FRWLP's highest priority segment was identified as Project Area C. DWR has decided to pursue this project area as the first construction contract.

- Discussions continue to address SBFCA's inquiries regarding availability of additional funding to complete their project.
- Construction of 1-mile of levee is complete.

- SBFCA had the pre-bid meeting and released pre-bid documents for Project Areas B & D.

STATEWIDE FLOOD PROGRAMS

The Statewide Flood Programs provide local entities financial support for State-wide flood and ecosystem restoration related projects. These programs include the Flood Control Subventions Program (FCSP), the Flood Corridor Program (FCP), the Local Levee Assistance Program (LLAP), and the Yuba-Feather Flood Protection Program (YFFPP).

YFFPP

YFFPP provides Proposition 13 financial assistance to local entities that can demonstrate non-structural flood management projects that show a peak flood flow reduction, flood stage, and flood risk in the Yuba and Feather River (including wildlife habitat enhancement and/or agricultural land preservation).

- No new information this month.

FCP

FCP 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.

- Magpie Creek Floodplain Conservation Project - The project funding agreement was executed on February 21, 2014. The Sacramento area project entails acquisition and cleanup of approximately 48 acres to preclude future urban development of five vacant parcels that are subject to flooding in 100-year storm events, reducing flood damage and protecting existing transitory storage on the acquired land.

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 for the project to result in no Delta habitat net loss. Additional Bay-Delta Levees Branch responsibilities are to support the levee system and habitat development; improve Delta flood fight capability through planning, cooperative efforts, encouraging the emergency response plan development for each Delta island; and conducting necessary program studies and contract efforts.

DELTA LEVEES MAINTENANCE SUBVENTION PROGRAM

DWR staff, on behalf of CVFPB, 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 2012-2013.

- The CVFPB's executive officer executed 65 work agreements.
- Staff received 60 final claims by the November 1, 2013, deadline totaling approximately \$12 million worth of work.
- DWR staff has conducted 37 joint levee inspections with the California Department of Fish and Wildlife and the local agencies.
- Claims are currently being reviewed for eligibility and completeness. Once fully reviewed, the eligible amounts will be reimbursed to the local agencies.

Work Agreements for FY 2013-2014.

- On September 13, 2013, the Board approved the FY 2013-14 funding plan for \$12 million dollars. Work Agreements have been mailed to the 67 local agencies for signature by the local agencies.
- To date, we have received 7 signed copies of the Work Agreements from the local agencies and will be routed to the CVFPB's executive officer for execution.

DELTA LEVEES SPECIAL FLOOD CONTROL PROJECTS

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

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 that include State-Federal project levees, as well as appurtenant 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 for landside and waterside slope stability, under- and through-seepage, erosion, freeboard, seismic and, where needed, to identify remedial measures and cost estimates to achieve the defined geotechnical criteria. The information developed to date has been used in support of the Central Valley Flood Management Planning Program to inform development of two required 2012 documents: the Flood Control System Status Report and the Central Valley Flood Protection Plan. Information currently shown in the table below is in process or pending, and will be used to support the 2017 updates to these documents.

The final analyses and Geotechnical Evaluation Report (GER) is the end result of a five-step process that includes the following steps: historical data collection, initial field investigation, preliminary analysis, supplemental field investigation, and final analyses and reporting. Each of these five steps results in the below listed deliverables.

The overall status of the ULE program intermediate and final deliverables for the 27 urban levee study areas are shown in the table below.

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Report (GER)
1	Chico	Done	Done	Done	Done	In Progress

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Report (GER)
2	Marysville	Done	Done	Done	Done	Draft volume 1 in preparation
3	RD 784	Done	Done	Done	Done	Review of Print check of final volume 1 is underway
4	Feather River West Levee	Done	Done	Done	Done	Draft volume 1 in preparation
5	Sutter Bypass Wadsworth	Done	Done	Done	Done	Draft volume 1 under review by DWR and ICB
6	American River	Done	Done	Done	Done	Draft volume 1 and 2 in preparation
7	Sacramento River	Done	Done	Done	Done	Draft 2 volume 1 responding to review comments
8	Davis	Done	Done	Done	Done	Draft volume 1 in preparation
9	Woodland	Done	Done	Done	Done	Draft volume 1 in preparation
10	NEMDC East	Done	Done	Done	Done	Draft volume 1 in preparation
11	NEMDC West	Done	Done	Done	Done	Draft volume 1 in preparation
12	Natomas North	Done	Done	Done	Done	Draft volume 1 and 2 in preparation
13	Natomas South	Done	Done	Done	Done	Draft volume 1 submitted under review by DWR and ICB
14	West Sacramento	Done	Done	Done	Done	Done
15	DWSC	Done	N/A	N/A	Done	Draft volume 1 in preparation
16	South Sac Streams	Done	N/A	Done	Done	In Progress
17	RD 404	Done	Done	Done	Done	Print check of Final volume 1 in preparation

No.	Urban Study Area	Historic Data Collection (TRM)	Initial Field Investigations (P1GDR)	Preliminary Analyses	Supplemental Field Investigations (SGDR)	Final Analyses & Report (GER)
18	RD 17	Done	Done	Done	Done	Draft volume 1 in preparation
19	Bear Creek	Done	Done	Done	Done	Draft volume 1 in preparation
20	Calaveras River	Done	Done	Done	Done	Task 3 In Progress
21	Lincoln Village	Done	N/A	N/A	Done	In Progress
22	Brookside	Done	N/A	N/A	Done	In Progress
23	Rough and Ready	Done	N/A	N/A	In Progress	In Progress
24	Boggs Tract	Done	N/A	N/A	In Progress	In Progress
25	Shima Tract	Done	N/A	N/A	In Progress	In Progress
26	SJAFCA upland levees	Done	N/A	N/A	In Progress	In Progress
27	Smith Canal	Done	N/A	N/A	In Progress	In Progress

ULE Summary

- Overall, ULE is 89% complete.
- The current date for completion of all GERs is planned for the end of 2014.
- ICB Meeting 21, occurred on March 4-5, 2014. In general, they are pleased with the work to date.

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 fewer than 10,000 people. The evaluation of current system performance includes 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 approximately 1,500 miles of non-urban levees that include State-Federal project levees and appurtenant 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 design criteria at the 55/57 design water surface for slope stability, under- and through-seepage, erosion, and, where needed, identify remedial measures and cost estimates to achieve the defined geotechnical design criteria. The information being developed will be used in support of the Central Valley Flood Management Planning Program to inform development of the six regional plans.

The overall status of the NULE program intermediate and final deliverables for the 21 non-urban levee study areas are shown in the table below.

No.	Non-Urban Study Area	Geotechnical Assessment Report (GAR)	Remedial Alternatives and Cost Estimate Report (RACER)	Geotechnical Data Report (GDR)	Geotechnical Overview Report (GOR)
1	Chico/North/South	Done	Done	Done	In Progress
2	Clarksburg	Done	Done	Done	Volume 1 Done , Final volume 2 in Progress
3	Colusa Drain	Done	Done	Done	Final volume 1 in Progress
4	Colusa North	Done	Done	Done	Draft volume 1 under review by DWR
5	Colusa South	Done	Done	Done	Draft volume 1 revision in Progress
6	Gerber	Done	Done	Done	Volume 1 Done , Draft volume 2 in Progress
7	Knights Landing	Done	Done	Done	Draft volume 1 revision in Progress
8	Sutter	Done	Done	Done	Draft volume 1 revision in Progress, Draft volume 2 in Progress
9	Wheatland	Done	Done	Done	Draft volume 1 under review by DWR
10	Woodland South	Done	Done	Done	Volume 1 Done , Draft volume 2 in Progress
11	Ash Slough	Done	Done	Done	In Progress
12	Berenda Slough	Done	Done	Done	In Progress
13	Black Rascal/Fairfield	Done	Done	Done	In Progress
14	Diverting Canal/Mormon	Done	Done	Done	In Progress
15	ESB/Chowchilla	Done	Done	Done	In Progress
16	Fresno River	Done	Done	Done	In Progress
17	Gravelly Ford	Done	Done	Done	Final GOR volume 1 in preparation
18	RD 2064	Done	Done	Done	In Progress
19	RD 2075	Done	Done	Done	In Progress
20	RD 2095	Done	Done	Done	In Progress
21	SJRRP/CCID	Done	Done	Done	In Progress
22	SJAFCA orphan levees (upper Bear Creek)	Draft GAR under DWR review	NA	NA	NA

NULE Summary

- Overall, Non-Urban Levee Evaluations are 90% complete.
- Preparation of GORs is continuing, with the current delivery dates scheduled for mid-late 2014. The results presented in the GORs will support FMO, regional plans, and SJRRP studies.

- Three volume 1 GORs have been completed: Woodland South; Gerber; and Clarksburg.
- A geotechnical assessment of non-urban levees in upper Bear Creek is underway. The draft Geotechnical Assessment Report is under review by DWR.
- An effort is currently underway to transfer ULE/NULE data to the California Data Exchange Center. The goal of this effort is to make ULE/NULE data available to other potential users at DWR (e.g., maintenance and inspections personnel). Data exchange requirements are being developed. This effort will be completed in parallel with the completion of the ULE/NULE projects.
- An additional effort is currently underway to add an interface to the DWR web site to make final documents available to the public.
- ICB Meeting 21, occurred on March 4-5, 2014. In general, they are pleased with the work to date.
- Planning is underway for a field investigation in the Knights Landing area. Additional field and lab data will support the LMA's geotechnical evaluation of potential remediation alternatives.

Support of Other DWR and USACE Programs:

- **CVFPP**

In support of Central Valley Flood Planning Program (CVFPP), ULE and NULE data and preliminary analyses were used to define levee reaches requiring remediation to bring them up to appropriate design standards; develop corresponding conceptual cost estimates; and prepare levee reliability curves and maps showing limits of deficiencies by failure mode (e.g., seepage, stability, erosion). New curves will likely be developed soon for the 2017 plan update.

- **FSRP**

In support of the FSRP, NULE and ULE information is being used to perform detailed assessment of potential repair sites in 74 Leveed Areas in the Central Valley. The 8000 records and 7000 points of interest collected for NULE were used as a basis for FSRP. Information and processes developed under NULE and ULE have been used to screen, assess and estimate the initial remediation costs of specific repair sites. In addition, FSRP repair sites undergoing further feasibility and design studies will use field investigation and analyses data being performed under the NULE project. Field reconnaissance for the FSRP project was completed by eight teams comprised of a combination of DWR and contractor staff. The Field Reconnaissance Summary Reports for the Sacramento River Basin and the San Joaquin River Basin have been finalized. The Pre-feasibility Cost Estimate Reports for north and south leveed areas have been finalized.

In addition to supporting the FSRP, NULE project information is being used to support development of the Rural Levee Repair Guidelines (RLRG) including preparation of templates for typical repairs. Development of the RLRG involves a collaborative effort with input from the U.S. Army Corps of Engineers, the Central Valley Flood Protection Board, DWR, local maintaining agencies, subject matter experts, and interested parties. Comments from key stakeholders on the final draft RLRG document are currently under review.

- **San Joaquin River Restoration Program**
The ULE/NULE team is supporting the San Joaquin River Restoration Project's efforts to meet the requirement of the settlement to increase the flow in the upper San Joaquin River. This support consists of providing to the Bureau of Reclamation and local maintaining agencies analyses of the geotechnical conditions of levees so that they can manage increases in flow with an understanding of the potential increased risk of flood. Standard geotechnical criteria (factor of safety, exit gradient) are being used. The first phase of field explorations has been completed. Additional geomorphic mapping is complete. Laboratory testing is complete for soil samples from these explorations. Analyses for areas with significant channel fill have been completed and a summary technical memorandum was prepared. A geophysical resistivity study is underway, scheduled to be completed early March, to identify potential anomalous levee conditions between existing exploration locations. The geophysical data will aid in the planning for other Phase 2 field activities. Phase 2 field work will be completed during the summer of 2014.
- **USACE Lower San Joaquin General Reevaluation Report (LSJGRR)**
Remediation cost estimating support – protocol developed for ULE/NULE levee repair cost estimating has been provided to USACE to assist their GRR program for the lower San Joaquin system.

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.

- ULE/NULE continues providing additional supporting data to USACE for the LSJFS.
- ULE continues to review/provide construction support the SBFCA Feather River West design project.

TECHNICAL POLICY SUPPORT

A statewide seismic policy was developed for levee performance, emergency levee remediation, and long-term levee remediation. Urban Levee Design Criteria (ULDC) were 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 and animal burrowing activities have on levee integrity; and to provide technical support for the development of management policies as part of the CVFPP.

- For vegetation issues, joint research with Sacramento Area Flood Control Agency (SAFCA) continues with ULE/NULE logistical and technical support. The following studies have been or are nearly completed:
 - Tree Root Architecture – How and where do tree roots grow on and near levees?
 - Levee Slurry Wall Investigations – Do tree roots penetrate slurry walls? What are their effects?

- How Trees affect Seepage and Stability of Levees – Do tree roots become preferential seepage pathways through a levee and do trees contribute to levee slope instability?
- Tree Windthrow – What are the forces necessary to topple trees on California Levees?
- Forensics – Has woody vegetation affected historic levee performance?
- An effort is being undertaken to conduct research, including records research and interviews, about points of interest for which the impact of vegetation on levee performance could not be ascertained based on currently available information.
- In support of the Flood Maintenance Office, a study is under way to assess the impact of burrowing mammals on the geotechnical performance of levees.
- In addition to the static evaluation process, two seismic studies are being performed for the ULE project. The objective of the first study is to develop conceptual seismic remediation alternatives and associated costs for areas of urban levees that have been identified as being potentially compromised by earthquake loading in the GER. The second seismic study focuses on West Sacramento as a prototype to perform economic analyses and to develop a cost/benefit assessment for seismic remediation. As part of this effort, a draft Seismic Remediation Alternative Report and a prototype seismic remediation cost/benefit study reports for the West Sacramento study area were prepared.
- Participated in various FloodSAFE FAXCTs (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 primarily includes: (1) SPFC Descriptive Document and (2) Flood Control Systems Status Report (FCSSR), which were completed and provided to Central Valley Flood Protection Board (Board) in November 2010 and December 2011, respectively. The SPFC Descriptive Document is to be updated as the SPFC is modified. The FCSSR is to be updated in 2016, and in subsequent years ending in 1 and 6.

CENTRAL VALLEY FLOOD PROTECTION PLAN (CVFPP)

The CVFPP reflects a system-wide approach to protecting lands currently protected from flooding by the SPFC. The Board adopted the 2012 CVFPP on June 29, 2012. The CVFPP is to be updated in 2017, and in subsequent years ending in 2 and 7. The 2012 CVFPP presents a State Systemwide Investment Approach (SSIA) for making improvements to the SPFC over time through five flood management programs: (1) Flood Emergency Response Program, (2) Flood System Operations and Maintenance Program, (3) Floodplain Risk Management Program, (4) Flood System Assessment, Engineering, Feasibility, and Permitting Program, and (5) Flood Risk Reduction Program. Two important components in further refining flood system improvements include developing Regional Flood Management Plans (RFMP) and two State-led Basin-wide Feasibility Studies (BWFS).

REGIONAL FLOOD MANAGEMENT PLANNING (RFMP)

RFMP is a DWR sponsored and locally led planning process to develop a long-term vision of flood management in six regions in the Central Valley. Initial elements of the RFMPs include a Regional Flood Atlas, information on Regional Flood Management Priorities, and a Regional Financial Plan. RFMPs are being coordinated with the two BWFS led by DWR. DWR staff continues to support RFMP efforts. DWR staff and SPFC Coordinators have participated in locally led workgroups and meetings to help with identifying regional problems, financial planning, flood emergency response, and small community protection strategies.

Monthly progress reports and RFMP activities are provided directly to the Board by Kim Floyd.

BASIN-WIDE FEASIBILITY STUDIES (BWFS)

The two BWFS (Sacramento River Basin and San Joaquin River Basin) are being conducted to describe the State's flood management objectives in each river basin, refine the scale and location of system elements in connection with regional improvements in the SSIA, inform development of the CVFPP financing plan, and integrate a system-wide environmental conservation strategy. To support development efforts of the BWFS, major work efforts are divided into Plan Formulation, Technical Evaluations, and Communication & Engagement & Coordination.

PLAN FORMULATION

CVFPO staff is conducting necessary analysis and developing documentation for completion of Milestone 2. With an anticipated completion date of April 2014, Milestone 2 will document the plan formulation approach for a range of SSIA consistent system configurations. The identified system configurations will undergo robust technical analysis including a trade-off analysis after the completion of Milestone 2.

TECHNICAL EVALUATIONS

The Central Valley Flood Planning Office (CVFPO) continues to work on a number of tasks to support the Sacramento River and San Joaquin River Basin-wide Feasibility Studies. Some of these tasks include assessing potential bypass system modifications to the State Plan of Flood Control (SPFC) to improve flood conveyance, and developing economic analysis procedures for flood management studies. The technical evaluation being undertaken for the feasibility studies utilizes the following tools:

- No new information this month.

COMMUNICATION, ENGAGEMENT, AND COORDINATION

- No new information this month.

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING

The Statewide Integrated Flood Management Planning Program (SFMP) is intended to address 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 inventoried existing and future flood management needs in the state's regions, identified opportunities for integrated flood management, and formulated potential integrated flood management solutions. The program published the report titled "Report on Flood Future: Recommendations for Managing California's Flood Risk" (Flood Future Report). In addition, SFMP includes integration of flood management into the California Water Plan.

FLOOD FUTURE REPORT

- No new information to report this month.

INTEGRATED FLOOD MANAGEMENT IN THE CALIFORNIA WATER PLAN

- No new information to report this month.

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 STRATEGY DOCUMENT

Conservation Strategy staff reviewed and provided additional edits to the 2014 Conservation Strategy Administrative Draft to insure internal consistency and make additional improvements. In late March, the draft will be circulated within DWR for broader review. During the next few months, as the document improves, staff will be conducting focused briefings with key stakeholders to ensure that the planned July public draft meets a variety of general expectations.

BASIN-WIDE FEASIBILITY STUDIES ALIGNMENT AND INTEGRATION

Staff continues to work closely with CVFPO to integrate ecosystem elements with flood system improvement options as CVFPO moves forward in 2014 with modeling potential configurations for the Sacramento BWFS and San Joaquin BWFS elements on a more detailed level.

INTEGRATED FLOOD AND RESTORATION PROJECTS

Salmonid Advanced Mitigation Bank

A protest was filed in 2013 on DWR's selection of this project, which has now been resolved. DWR is working with the applicant to finalize the contract.

TRLIA Levee Setback

DWR is finalizing the funding agreement for the TRLIA project.

Urrutia Project

SAFCA withdrew the project because the appraised property value was unacceptable to the seller.

REGIONAL PERMITTING – FEATHER RIVER HCP/2081

DWR submitted an ESA Section 6 (Cooperative Endangered Species Conservation Fund) federal grant to Department of Fish and Wildlife to support development of the Feather River HCP/2081 permit. A Habitat Conservation Development Team meeting was held on February 13th. Communications and Outreach activities included developing a list of stakeholders that staff will meet with in March and April.

REGIONAL FLOOD MANAGEMENT PLAN (RFMP) ENVIRONMENTAL SUPPORT

DWR managers met with the Mid-Upper San Joaquin River RFMP leads to discuss the Conservation Strategy and potential opportunities for integrated flood management projects in that region. Similar meetings with other RFMP leads are being scheduled for March and early April. Staff continues to attend RFMP meetings to provide information about the Conservation Strategy. They have provided all regions with important environmental data and other information useful for RFMP planning.

PERMITTING OF ADVANCE MITIGATION IN THE FLOODWAY

DWR staff has been working with CVFPB staff to develop a presentation on permitting advance mitigation in the floodway for the March 28th Board Meeting. CVFPB staff will be giving this presentation.

REFINEMENT OF LEVEE VEGETATION MANAGEMENT APPROACH

As requested by the CVFPB when adopting the 2012 CVFPP, staff has been working to refine the system-wide approach to managing levee vegetation. Based on a robust synthesis of research and in consultation with key interests, staff have developed an improved approach that focuses on inspection visibility and accessibility, as well as targeting potentially hazardous trees. Staff presented this approach to the February 26th RFMP Coordinating Committee and received useful comments. Staff will meet with targeted stakeholders to continue developing the concept and is scheduled to give a presentation to the Floodplain Managers Association on March 20th. Staff will present the approach to the full CVFPB in May.

US ARMY CORPS – SACRAMENTO DISTRICT PLANNING DIVISION

DWR managers met with USACE Planning Division managers to brief them on the Conservation Strategy and to identify opportunities to work with them on their Central Valley Integrated Flood Management Study (CVIFMS). The USACE Planning Division, which is supportive of multi-purpose planning and projects, would like to work closely with DWR and incorporate DWR data and analysis into the CVIFMS. CVIFMS has flood and ecosystem improvements as co-equal goals. The initial milestone report on CVIFMS is due by the end of the calendar year.

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

- No new information to report this month.

FUNDING ADVOCACY & AGENCIES' ALIGNMENT

- No new information to report this month.