

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

By

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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

The Flood Project Inspection Section has completed all fall inspections, uploaded the reports to the webpage at <http://cdec.water.ca.gov/fsir.html> and notified LMAs that the reports are available. Draft copies of the new *Inspection and Local Maintaining Agency Report* are anticipated to be sent to the CVFPB by the end of December 2012. Final versions will be available shortly after the New Year. Staff has begun preparing for activities in 2013. Inspectors continue to assist the FOC and others during issues related to high water. On December 24, 2012, two Flood Fight Specialists helped to address overtopping and seepage issues in East Palo Alto.

FLOOD PROJECT INTEGRITY/VULNERABILITY ASSESSMENT ACTIVITIES

The Supplemental Levee Erosion Survey section has completed the 2012 annual levee erosion survey for San Joaquin River Flood Control (SJRFC) system, finished site scoring and ranking, updated the levee erosion database, and submitted the annual erosion survey summary report. The section has improved erosion site scoring and ranking criteria. The new criteria are to be applied in the levee erosion survey for the year of 2013. Staff continued to assist the desk study and field survey tasks of Utility Crossing Inventory Surveys.

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

Staff finalized the draft copies of the new *Inspection and Local Maintaining Agency Report* which is anticipated to be sent to the CVFPB by the end of December 2012. Final versions will be available shortly after the New Year.

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 November 30, statewide hydrologic conditions were as follows: precipitation; 110 percent of average to date, runoff; 90 percent of average to date, and reservoir storage; 100 percent of average for the date. Sacramento River Region unimpaired runoff observed through November 30, 2012 was about 1.5 million acre-feet (MAF), which is about 108 percent of average. For comparison, on November 30, 2011, the observed Sacramento River Region unimpaired runoff through that date was about 1.1 MAF, or about 77 percent of average.

During the last week of November, a series of strong weather systems brought very heavy widespread rain to Northern California and portions of Central California. This significant wet pattern lasted through the first weekend of December and greatly enhanced the State’s water supply.

On November 30, the Northern Sierra 8-Station Precipitation Index Water Year total was 15.7 inches, which is about 169 percent of the seasonal average to date and 31 percent of an average water year (50.0 inches). During November, the total precipitation for the 8-Stations was 13.0 inches, which is also about 206 percent of the monthly average. Last year on November 30, the seasonal total for the 8-Stations was 6.6 inches, or about 71 percent of average for the date.

On November 30, the San Joaquin 5-Station Precipitation Index Water Year total was 7.6 inches, which is about 112 percent of the seasonal average to date and 19 percent of an average water year (40.8 inches). During November, the total precipitation for the 5-Stations was 6.3, which is also about 134 percent of the monthly average. Last year on November 30, the seasonal total for the 5-Stations was 4.0 inches, or about 59 percent of average for the date.

| Selected Cities Precipitation Accumulation as of 11/30/2012 (National Weather Service Water Year: July through June) | | | | | |
|--|--|--------------|--|--------------|--|
| City | July 1 to Date 2012 – 2012 (in inches) | % Average | July 1 to Date 2011 – 2011 (in inches) | % Average | % Avg “Water Year” July 1 to June 30 2012 - 2013 |
| Eureka | 9.83 | 110 | 8.65 | 97 | 24 |
| Redding | 9.12 | 122 | 5.95 | 79 | 26 |
| Sacramento | 5.03 | 149 | 2.08 | 62 | 27 |
| San Francisco | 5.97 | 131 | 3.23 | 71 | 25 |
| Fresno | 1.34 | 71 | 1.57 | 83 | 12 |
| Bakersfield | 0.12 | 11 | 1.31 | 124 | 2 |
| Los Angeles | 1.46 | 74 | 2.33 | 119 | 11 |
| San Diego | 0.88 | 49 | 3.71 | 208 | 9 |

| Key Reservoir Storage (1,000 AF) as of 08/31/2012 | | | | | | | | |
|---|-------------|---------|-----------------|-----------|----------|------------|----------------------------|-----------------------|
| Reservoir | River | Storage | Average Storage | % Average | Capacity | % Capacity | Flood Control Encroachment | Total Space Available |
| Trinity Lake | Trinity | 1,776 | 1,614 | 110 | 2,448 | 73 | --- | 672 |
| Shasta Lake | Sacramento | 2,564 | 2,777 | 92 | 4,522 | 56 | -688 | 1,988 |
| Lake Oroville | Feather | 1,862 | 2,192 | 85 | 3,538 | 53 | -1,004 | 1,676 |
| New Bullards Bar Res | Yuba | 623 | 523 | 119 | 966 | 65 | -173 | 343 |
| Folsom Lake | American | 404 | 467 | 86 | 977 | 41 | -173 | 573 |
| New Melones Res | Stanislaus | 1,503 | 1,318 | 114 | 2,420 | 62 | -467 | 917 |
| Don Pedro Res | Tuolumne | 1,190 | 1,311 | 91 | 2,030 | 59 | -500 | 840 |
| Lake McClure | Merced | 373 | 449 | 83 | 1,025 | 36 | -302 | 652 |
| Millerton Lake | San Joaquin | 263 | 218 | 121 | 520 | 51 | -173 | 257 |
| Pine Flat Res | Kings | 214 | 376 | 57 | 1,000 | 21 | -460 | 786 |
| Isabella | Kern | 84 | 150 | 56 | 568 | 15 | -86 | 484 |
| San Luis Res | (Offstream) | 807 | 1,247 | 65 | 2,039 | 40 | --- | 1,232 |

The latest National Weather Service Climate Prediction Center (CPC) long-range 1-month precipitation outlook for December 2012, issued November 30, 2012, suggests above average rainfall for the northern half of California and no tendency for above or below average rainfall for the southern half of the State.

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)

No new information this month.

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)

Continued work on development, review and approval of flood-flow frequency analysis, regulated flow time series, unregulated-to-regulated flow transforms and stage-to-flow transforms and rainfall-runoff modeling of ungaged streams.

On December 18, the CVHS team held a workshop and presented the draft unregulated flow frequency curves and the methodology used for their development.

Internal coordination continued with USACE and DWR Central Valley Floodplain Evaluation and Delineation Program (CVFED).

We continued resolving technical issues between CVHS and CVFED products.

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.

- Mulching Butte Creek is on-going (10 acres).
- Beaver Dam Removal is on-going in Cherokee Canal.
- Willow Slough Channel Evaluation (Hydraulic Model) is 50% complete. Using 2006 High Water Mark data for calibration.
- Wadsworth Canal Channel Evaluation (Hydraulic Model) is 50% complete.
- Mowing at Bear River is 100% complete (185 acres).

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.

- Debris Removal is on-going at all pumping plants in Sutter Bypass, Knights Landing Outfall Gates, and Sacramento Weir.
- Pumping Plant operations on-going at all 3 Sutter Bypass pumping plants.
- Knights Landing Outfall Gates
 - An extension for time on permits was accepted to complete in water work by November 30.
 - All gates have been replaced and are currently operating under power with response to the water level sensor in the Colusa Drain.
 - Debris Removal is 100% Complete (4 tons).

LEVEE 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.

- Spraying/Spot Burning on-going in all areas for Sutter Yard.
- Spot Spraying 75% complete for Willow Slough (5 miles).
- Grading/ Graveled crown roadways at Wadsworth Canal are 80% complete (4 miles).
- Rodent Control on-going in all areas for Sacramento Yard.
- Fire Guarding/Spraying 85% complete for Putah Creek (14 miles).
- Mowing for Prospect Island 50% complete (1.25 miles).
- Grouting in MA-9 99.9% complete.
- Grouting rodent holes is 100% complete for the season.
- On December 12th, Maintenance Support Branch staff participated in the Flood Fight Exercise on Twitchell Island with the California Conservation Corps (CCC) and the Sacramento County Office of Emergency Services (OES). Maintenance Support Branch staff, along with DWR Flood Fight Specialists, advised the CCC on flood fighting methods and conducted communications interoperability tests with Flood Operations Command and Sacramento County OES.
- On December 13th, Maintenance Support Branch staff, along with Division of Engineering (DOE) staff and the contractor (Dutra), conducted the final inspection of the erosion repair project (Specification 12-09). DWR's Division of Engineering will provide As-Built Drawings and a Close-Out Report.
- Grading/ Graveled crown roadways 100% complete for:
 - East Interceptor Canal (2 miles)
 - Putah Creek (7 miles)
- High Water Patrolling ongoing in MA01, MA05, MA12, MA13, East Levee Sacramento River
- Fire Guarding/Spraying 100% Complete for:
 - Willow Slough (12 miles)
 - Cache Creek (3 acres)
 - Sac Bypass (4 miles)
 - Units 1,2,3 (1 acre)
- Levee Crown Spraying 100% Compete at:
 - Unit 4 (2 Miles)
 - Putah Creek (16 miles)

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.

Small Erosion Repair Program (SERP)

DWR's Flood Maintenance Office (FMO) is continuing to develop the Small Erosion Repair Program (SERP), as described in the 2012 Central Valley Flood Protection Plan and Conservation Framework. With the SERP manual finalized as of August 2012, FMO has submitted applications for SERP authorization to the Department of Fish and Game, the U.S. Army Corps of Engineers for a regional general permit, and the Regional Water Quality Control Board for water quality certification. In addition, FMO is targeting early February 2013 for posting the Program Environmental Impact Report for public comment. To prepare for implementation in the 2013 construction season, FMO has started development of a geo-database for managing SERP site data from assessment to post-construction monitoring (5 years), will conduct field reconnaissance and evaluation in January 2013 to identify potential sites for 2013 construction, and initiate early engineering and environmental assessments to support preparation of the annual submission package to agencies.

LEVEE REPAIRS

The Levee Repairs Program consists of projects for repair, rehabilitation, reconstruction, or replacement of levees, weirs, bypasses, channels, and other facilities of the State Plan of Flood Control. Types of repairs are critical (has likelihood of failure during next high water event), serious (can withstand one high water event; likelihood of failure on subsequent high water events), and proactive (small deficiencies that are worsening rapidly and that can be designed and constructed by the Local Maintaining Agency (LMA)). Levee repair projects are implemented through collaboration with federal and State resource agencies, USACE, and LMAs. Levee repairs are done under three federal authorized programs; Sacramento River Bank Protection Project (SRBPP), Levee Stability Project (LSP), and PL84-99 Rehabilitation Assistance Project (PL84-99). In addition, the State is developing guidelines for a new project, Flood System Repair Project (FSRP), to address deficiencies in the entire SPFC Facilities in the Central Valley Watershed; FSRP replaces the San Joaquin River Bank Protection Project.

Flood System Repair Project (FSRP)

- Field reconnaissance efforts for FSRP began on July 12, 2012 to identify and evaluate levee deficiencies for the State Plan of Flood Control. This field reconnaissance was completed in mid-September, 2012. Repair site prioritization and development of agreements with the local reclamation districts have begun, as well as preliminary repair alternative and cost development.
- Draft Guidelines for development of work and cost-sharing agreements with DWR will be available for public comment and review pending internal approval. Public outreach meetings will be held during this 45-day public review period.

PL84-99 Rehabilitation Assistance Project (PL84-99)

No new information this month.

Sacramento River Bank Protection Project (SRBPP)

No new information this month.

Levee Stability Program

No new information this month.

Rural Levee Repair Criteria (RLRC)

No new information this month.

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.

- FPM staff conducted a FEMA-DWR Community Assistance Program meeting with the FEMA Region IX program manager to lay out the work plan for the new federal fiscal year. (CAP contract meeting)
- Conduct a two-day NFIP workshop coordination meeting in Oakland, FEMA region IX office. The purpose of the meeting was to initiate the effort to update the training material for each of the NFIP workshops conducted by the Floodplain Management Assistance Section as a part of the CAP contract. The FPMA Section has designated a Training Coordinator to be the main point of contact for FEMA.
- FPM staff provided approximate seventy hours of technical assistance to local communities, other State agencies, and the public regarding the NFIP (including within building codes), CFM, and Federal grants related questions this month.
- Staff has completed the CAV reports for the Cities of Fairfax, Soledad and the County of Colusa.
- Staff is continuing to update work products to be consistent with the new CRS Coordinator's Manual, due out in 2013
- Staff met with representatives from the City of Roseville and Placer County on December 18th to discuss development of a model community emergency response plan for dam failure inundation; a partnership between DWR and the City was established and plan development has been initiated
- Staff met with representatives from the City of West Sacramento on December 14th to discuss development of a model community emergency response plan for flooding due to levee failure; a partnership between DWR and the City was established and plan development has been initiated

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.

Alluvial Fan Floodplain Evaluation and Delineation (AFFED)

The project team continues to make progress on developing preliminary flood hazard maps for the Riverside and Ventura counties. The overall progress/status of the project, including model development and flood hazard map delineation, is as follows:

- Two-dimensional models and flood hazard delineation maps for “High Priority” and “Remaining” alluvial fan areas in both Riverside and Ventura Counties are completed.
- Independent QA/QC of two-dimensional models and flood hazard delineation maps for “High Priority” alluvial fan areas in both Riverside and Ventura Counties are completed. But independent QA/QC for “Remaining” alluvial fan areas in Riverside and Ventura Counties are still in progress.

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.

The Central Valley Floodplain Evaluation and Delineation Program updated its schedule as follows:

- | | |
|---|-----------|
| • Topography Acquisition | COMPLETED |
| • Riverine and Floodplain Hydraulic Model Development | June 2013 |
| • Floodplain Delineation – ULOP 200-Year | July 2013 |

The current status of the CVFED Hydraulic Model Development Project is as follows:
Riverine Hydraulic Model Development (HEC-RAS):

- Upper Sacramento basin: 96 % completion
- Lower Sacramento basin: 93 % completion
- Upper San Joaquin basin: 84 % completion
- Lower San Joaquin basin: 97 % completion

Overland Hydraulic Model Development (FLO-2D):

- Upper Sacramento basin: 96 % completion
- Lower Sacramento basin: 90 % completion
- Upper San Joaquin basin: 91 % completion
- Lower San Joaquin basin: 97 % completion

Combined HEC-RAS/FLO-2D System Model Development:

- Upper Sacramento basin: 26 % completion
- Lower Sacramento basin: 41 % completion
- Upper San Joaquin basin: 30 % completion
- Lower San Joaquin basin: 20 % completion

In the month of December FEB processed six requests from public agencies for data and transferred a total of 34,703 LiDAR tiles and 87,527 tiles of Aerial Imagery. The total amount of data transferred in December adds up to about 15.9 TB equaling a land area of about 31,120 square miles.

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.

- Staff continues to respond to questions and comments from the recipients of the 2012 Flood Risk Notice; as of 12/27/2012, we have received 112 inquiries.
- FPM staff briefed the Central Valley Flood Control Board about the Flood Risk Notification program.
- FPM staff is working with FEMA to track the changes of the flood insurance policies in the Levee Flood Protection Zones located in 17 counties and 22 incorporated cities.

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.

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, represented by the Central Valley Flood Protection Board (CVFPB), participates and provides cost-share for feasibility studies with the United States Army Corps of Engineers (USACE) and local partners. Several studies are underway.

American River Common Features (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 Natomas Cross Canal, and the Natomas Cross Canal. The Post Authorization Change Report (PACR) evaluated alternative plans for the levee system around the Natomas Basin and acts as an interim general reevaluation study to the GRR.

- USACE held the I-Street Structure alternative workshops to identify Environmental, Structural, and System-wide impacts for development of the alternative cost estimate. Workshop panel experts identified fatal flaws such as cost and excessive implementation time. These flaws were substantial enough to discount the alternative as the tentatively selected plan. According to USACE, the workshops are enough evidence the alternative was adequately analyzed.

Merced County Streams Project-Bear Creek GRR

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

- Nothing new to report this month.

Rock Creek/Keefer Slough Feasibility Study

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

- Nothing new to report this month.

Sacramento River Flood Control System Evaluation

The Sacramento River Flood Control System Evaluation will concentrate on deficiencies in non-urban levees that may be a threat to small/rural communities because of levee instability; and will identify and prioritize sites that will be presented in a final report. No projects will be created to correct deficiencies during this study.

- Nothing new to report this month.

Sutter Basin Feasibility Study

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

- Nothing new to report this month.

West Sacramento GRR

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

- Nothing new to report this month.

West Stanislaus County - Orestimba Creek Feasibility Study

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

- Nothing new to report this month.

White River/Deer Creek Feasibility Study

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

- Nothing new to report this month.

Woodland/Lower Cache Creek Feasibility Study

USACE will develop alternatives for a new feasibility study to determine if there is a NED plan that is federally justified. The study will continue efforts suspended in 2004 after local resistance to the USACE-selected Flood Barrier Option alternative.

- Nothing new to report this month.

Yuba River Basin Project GRR

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

- To secure credits for past non-federal project-related activities and expenses, USACE District submitted a Post Authorization Documentation Report and an accompanying Integral Determination Report. These reports show how completed projects fall under the original authorization, allowing immediate use of credits for the Marysville Ring Levee. The Project Development Team (PDT) was informed that HQ agreed with the reports' determination, and since the 5% minimum requirement was met, the Non-federal partners would not be required to contribute additional funds. USACE District wants HQ to modify the agreement memo to allow USACE to be out of balance for the project, so USACE District can start using existing USACE funds without Non-federal matching funds.

EARLY IMPLEMENTATION PROGRAM (EIP) PROJECTS

EIP includes projects ready to proceed in advance of the Central Valley Flood Protection Plan. An element of approval for these projects ensures 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 to provide increased flood protection for Yuba City.

- Close-out documents are under staff review. Some open real estate issues are being resolved.

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

The RD-17 levees have unacceptably low factors of safety 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 level of flood protection for South Stockton, Lathrop, and Manteca communities.

- DWR is working with RD-17 to establish the direction of the Phase III design, and extend the funding agreement for three years.

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

This project will offer 200-year flood event protection for both Highways 65 and 70, benefiting the areas of Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes one of the largest setback levees west of the Mississippi River and creates 1600 acres for on-site mitigation, agricultural use, and habitat.

- Some open real estate issues are currently being resolved.
- Project construction documents are being reviewed by staff..
- Site is under consideration to receive a grant from FESSRO to create habitat for advance mitigation to offset environmental effects from flood system maintenance and construction.

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

This project will offer 200-year flood event protection for both Highways 65 and 70, benefiting the areas of Olivehurst, Linda, Plumas Lake, Marysville, and Yuba City. This project includes a portion of the South levee on the Yuba River.

- Final construction element of the Upper Yuba Project (Shad Pad, Yuba Levee from station 5+80 to 9+00) was completed. Excluding real estate acquisitions, the Upper Yuba Project is now 100% complete.

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

This project is part of the Natomas Levee Improvement Program and would improve the level of flood control protection in the Natomas Basin by providing a 200-year minimum level of flood protection. This will be accomplished by installing cutoff walls to prevent seepage, under-seepage, and raising the levee.

- EIP is working with SAFCA staff to close out NCC Phase Two to release additional funds to SAFCA. DWR construction staff is reviewing SAFCA's documentation for sufficiency.

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

This project is part of the Natomas Levee Improvement Program and would improve the level of flood control protection to the Natomas Basin by providing a 200-year minimum level of flood protection. This will be accomplished by installing cutoff walls to prevent through-seepage, under-seepage, and raising the levee. SAFCA plans to complete components to Element 12A (approximately RM 67) along the Sacramento River in 2012 and have USACE complete the remaining work in 2014.

- SAFCA talking with EIP for an approximate \$37 million increase in the funding agreement amount because of increased project costs. SAFCA submitted a revised work plan, outlining the increased costs, and EIP staff is reviewing the work plan to prepare an Amendment to the Funding Agreement (FA). Recent changes by SAFCA caused delays in completing the FA Amendment. SAFCA consultants are working on supportive documentation to support an estimated \$10 million increase in real estate. This increase is because of the Final Accounting Package completion, which shows an increase in costs of eminent domain proceedings and crop loss settlements.

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

The California Highway Patrol Academy, the Rivers, and the I-Street Bridge projects are part of the North Area Plan. All major construction is complete for these sites. These projects correct through-seepage and foundation under-seepage with excessive hydraulic gradients, embankment instability and erosion, and scouring. All three projects are designed to provide a 200-year level of protection for about 47,000 residents. The Southport area is under design and may include a large setback levee.

- WSAFCA informed DWR the 65% plans and specifications were completed. DWR is waiting to receive them.

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

The Feather River West Levee Project plans to design the repair of approximately 35 miles of levee along the west bank of the Feather River from Thermalito Afterbay to the north end of Star Bend. The design will include use of slurry walls and seepage berms to protect the communities of Gridley, Biggs, Live Oak, Yuba City, and parts of Sutter and Butte counties.

- Staff is waiting for further information from SBFCA to proceed with executing a construction funding agreement. This agreement will be for \$56.78 million toward critical levee improvements next to Yuba City.

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.

- Howe Avenue and R6 construction is complete. R6 final inspection is complete. The Howe Avenue asphalt access ramp did not meet specifications and is being corrected by the USACE contractor in early January 2013.
- FY13 award sites L7, R7, L10 and R3A designs are 60% complete. The State submitted comments to USACE for all sites.
- Work on the Natomas Basin and American River design and construction component was postponed until federal authorization and funding is approved.
- The \$1.5M payment for FY13 work was submitted to USACE.

Folsom Dam Raise and Bridge Element

The Folsom Dam Raise and Bridge Element Project provide flood damage reduction and dam safety benefits to Sacramento.

- A Project Partnership Agreement (PPA) is scheduled for discussion and execution in 2014. The temperature control shutters design is 35% complete and will be shelved to focus on updating three existing emergency spillway gates.
- USACE is working on the dam raise funding stream with possible construction beginning in 2017.

Folsom Dam Modifications (Joint Federal Project)

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

- Construction – The Phase III control structure construction is now estimated to be 35% complete, which includes that concrete progress is 24% complete; tainter gates are 24% complete and bulkhead gates are 31% complete.
- Design – The Phase IV chute, stilling basin, and approach channel design final back check was completed on November 16. The design package was 100% completed on November 30. The Phase IV contract RFP will be distributed on Federal Business Opportunities Solicitation on December 26 and is expected to be awarded in May 2013.
- The Folsom Dam Modification Project, Approach Channel Supplemental Environmental Impact Statement / Environmental Impact Report will be circulated for final NEPA 30-day public review in December, and is expected to be presented to the Board in March for CEQA approval.
- LERRDs – USACE awarded a site preparation contract on November 30, 2012, for a Phase IV staging area on Folsom Prison property. This staging area is leased from the State CDCR. Notice-to-Proceed was provided on December 14. Contract preparation is estimated to be completed by the contractor early next year.
- Folsom Dam Water Control Manual Update – The Overall schedule for the Update is being reviewed until December 30. The project team is scheduling second sets of stakeholder outreach meetings in January 2013.

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

The Lake Kaweah Enlargement Project was completed in 2006. Remaining work is focused on turning over the O&M to the local sponsors, finalizing all financial balancing, and completing final real estate documents.

- DWR anticipates preparing a crediting package for LERRD expenses in early 2013. Initial estimates are approximately \$1.5 million in creditable costs. DWR would expect to receive credit or cash reimbursement from the USACE after approval of the crediting package.
- DWR and CVFPB resolved the Davis Ranch mitigation site land (506 acres) issue. Credit was issued to DWR as agreed upon in a 12/5/2012 letter from KDWCD, and a quitclaim was unnecessary as determined by DWR and CVFPB counsel.

Marysville Ring Levee Improvement Project

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

- Phase 1 cutoff wall construction is substantially complete. The contractor is completing the outstanding inspections and certification items.

- Phases 2A and 4A design will continue in January, with Phase 4A construction beginning in the spring of 2013.
- Phase 2B design will begin in the summer of 2013.
- Phases 2C and 3 designs will begin in the winter of 2013.

Mid-Valley Area Levee Reconstruction Project

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

- DWR received the final designs for Sites 9, 10, & 11. All design documents have now been received for Area 3 of the Mid-Valley Project.
- To avoid running out of federal funds, USACE will reprogram \$49,999 to complete the Economic Reevaluation Report, Environmental Assessment/Initial Study document, and PCA Amendment.

South Sacramento Streams Project

The South Sacramento County Streams Project will increase the level of flood protection for the urbanized area of South Sacramento County and an area to the south and east of the city of Sacramento. Portions of the project were completed on the four creeks, and additional improvements are planned.

- Construction on a 3,000-foot floodwall began along Morrison Creek on May 1, 2012, and is approximately 95% complete. The Construction site was winterized in early December 2012, due to weather preventing the completion of the construction. Work will resume May 1, 2013, and the few remaining construction items on the project will be completed. The city of Sacramento is in process of submitting “functionally complete” plans to FEMA to allow for a LOMR to eliminate the floodplain.
- The USACE is quickly exhausting federal funds for this project because of excessive cost change orders on the floodwall project. Work is likely to be cancelled by USACE in the near future because of a lack of funds; therefore, leaving flood protection improvements unfinished on Florin Creek.

West Sacramento Area Project, Slip Repair

The West Sacramento Area Project raised and strengthened five miles of levees by a maximum of five feet on the east side of the Yolo Bypass and the south side of the Sacramento Bypass. Initial repairs were completed in 2001, but additional slips were identified during the high water events of 2006 and March 2011.

- Work was completed and the project is being closed out by USACE.

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 (FCSP), Flood Corridor Program (FCP), Local Levee Assistance Program (LLAP), and Yuba-Feather Flood Protection Program (YFFPP).

FLOOD CORRIDOR PROGRAM (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.

- **Flood Corridor Grant Program**
The Program submitted funding agreements to the DWR Chief Counsel's Office for review of 11 of 13 awarded flood risk reduction projects approved by Director Cowin earlier this year. The projects will fund over a total of \$58 million in Proposition 84 and 1E grants to 13 localities statewide to reduce flood risk in communities while protecting wildlife habitat and agriculture. The \$8.9 million Elkhorn Basin - River Ranch funding agreement was signed, and ten additional grant funding agreements, totaling approximately \$36 million, are expected to be signed by DFM management within the next several weeks. FCP anticipates that there will be approximately \$28 million in remaining funds available for future grant awards.
- **Elkhorn Basin**
River Ranch Conservation Easement Acquisition Project – Despite earlier objections, the owners of the project site accepted DWR's standard indemnification language, and the funding agreement has now been signed by the Grantee and DWR. The Grantee hopes to close escrow on the easement acquisition as early as possible. Program staff, DWR Real Estate Office, and Division of Environmental Services are completing reviews.
- **Carmel River Floodplain & Environmental Enhancement Flood Corridor Project**
Funding partners, including staff from FPO's Flood Corridor Program, attended a meeting with Resources Agency staff member, Bryan Cash, to discuss scheduling delays for the project. The meeting focused on keeping funding alive despite an anticipated project schedule delay, while the primary land owner seeks transfer of water rights approval from the State Water Resources Control Board. Some funding sources have deadlines for committing the funds that fall before the project can move forward. An update on resolving the water rights issue is anticipated in early January.
- **Magpie Creek**
SAFCA will review the resolution of the formal dispute (expected at the end of January 2013) between California Department of Toxic Substances Control and USAF regarding toxicity issues at the site, as previously noted. A decision on whether to proceed with the proposed project is expected to be made in early February 2013.
- **Alamo Creek Flood Corridor Grant**
City of Vacaville (City) notified Flood Corridor Program Branch staff on September 12, 2012, of a discovery of cultural resources in the inlet channel of the basin. The City is working with the various stakeholders for the project to come to an acceptable resolution. At this time, the earliest the City would move forward with the project is next year. Kimberly Johnston-Dodds, DWR Tribal Liaison and Policy Advisor, was notified. The City has hired Far Western, an Anthropological consultant firm, for additional cultural identification to be done in three phases. All work was originally slated to be completed prior to October 15, 2012.

FLOOD CONTROL SUBVENTIONS PROGRAM (FCSP)

FCSP 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.

- Five claims, totaling \$2.6 million, were approved for payment.
- Four claims, totaling \$2.8 million, are currently under review.
- Two new claims, totaling around \$1 million, were received.
- Four audit payments, totaling around \$1 million, were approved.
- In total, forty three funding reimbursement requests for \$74.6 million are pending review (excluding amount pending SCO audit release).

- FCSP is performing the cost share evaluation for the Los Angeles County Drainage Authority (LACDA) project.
- FCSP is in the process of updating Program Guidelines.

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.

- Management approval was received for 38 new projects, including service requisitions and contract numbers.
- Project Managers (PMs) have reviewed and approved contract work plans for many of the new projects and have negotiated finalized Grant Agreements with several of the grantees. These contracts have been sent to the local sponsors for signature. Those that have been sent out include, ten contracts with Ventura County, seven with Alameda County, and two with San Francisco Creek Joint Powers Authority
- Staff continues to work with the remaining grantees on contract negotiations over project work plans and contract language.

YUBA-FEATHER FLOOD PROTECTION PROGRAM

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.

- The Director’s Decision Memo for the YFFPP 2012-13 PSP is being reviewed for approval.

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 & PROGRAM SOLICITATIONS

LLAP finalized program guidelines and published a Program Solicitation Package in 2011.

- The final Director’s Decision Memo (DDM) for the approval of the Final List of LLAP Grantees was approved by the Division of Flood Management (DFM) Chief. The Final List of Grantees was published on December 10 via email and the web.
- Non-Urban Flood Risk Management (NFRM) Program – FPO staff continues to work on developing the NFRM program draft Guidelines and PSP. Discussions are still shaping the program’s scope, cost-share, and funding constraints.

ENVIRONMENTAL SUPPORT

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

- Most activities are described under the individual project headings.
- Lower Feather River Corridor Management Plan – The Permitting Subcommittee met on December 10 to review the list of maintenance activities that would be covered under programmatic permits for the Feather River between the Sutter Bypass and the Highway 20 Bridge connecting Yuba City and Marysville. There was also discussion about the types of permitting mechanisms that would be appropriate. On December 13, the Management Core

Team received preliminary feedback from cbec's low-flow modeling work, indicating a 1600-acre TRLIA setback area would not be inundated as frequently as had been anticipated; therefore, advance mitigation and restoration work at that site must adapt to reflect conditions that will be drier than had been anticipated. The modeling shows the expected inundation frequency was adversely affected by the breach at Shanghai Rapids.

- FESSRO's Conservation Grants – In a meeting on December 4, 2012, between FESSRO and FPO to coordinate their effort to fund advance mitigation for flood projects, it was identified that further coordination needs to be done to ensure most effective use of the conservation grants to support flood projects' advance mitigation needs. One potential use of the conservation grants was to evaluate and finalize corridor plans developed because of any setback projects funded by EIP or the new Urban Flood Risk Reduction (UFRR) program. It is also critical to safeguard against any potential duplication and look to leverage such funds to ensure projects are meeting CVFPP and environmental stewardship objectives of multi-objective projects.

TECHNICAL ASSISTANCE

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

- Program staff hosted a brown-bag seminar on the National Levee Database. The seminar was given by a USACE GIS modeling specialist.
- FAIR Committee – Staff coordinated with multiple offices to develop documentation for contracting language and processes to be used toward a FAPP. Staffs are completing the final draft and are packaging all the documents for submission for approval.
- Program staff hosted a brown-bag seminar on water modeling software, hosting a USACE HEC modeling specialist.

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 net loss of habitat in the Delta. Additional responsibilities under the Bay-Delta Levees Branch are to 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 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 2010-2011

- DWR staff mailed work agreements to 68 reclamation districts and received signed work agreements from 65 reclamation districts.
- Final Claims were received from 61 reclamation districts totaling \$17.9 million.

- DWR staff completed joint levee inspections and received California Department of Fish and Game (DFG) approval for all final claims received.
- All reimbursements were processed totaling \$11.4 million.

Work Agreements for FY 2011-2012

- DWR staff mailed work agreements to 66 reclamation districts and received signed work agreements from 64 reclamation districts.
- Final claims were received from 55 reclamation districts totaling \$10.8 million by the deadline of November 1, 2012.
- DWR staff completed 31 joint levee inspections.

Work Agreements for FY 2012-2013

- The FY 2012-2013 funding allocation plan, presented to the Board on September 28, 2012, was approved by the Board. The plan allocates the funding of \$12 million to 67 reclamation districts.
- DWR staff mailed work agreements to 67 reclamation districts for signature. To date, staff received signed work agreements from 28 districts. Agreements received will be forwarded to the board's executive office for execution.

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 executes agreements authorizing the work proposed under Project Solicitation Packages (PSPs).

- DWR committed approximately \$350 million dollars for levee work in the Delta, of which, approximately \$135 million was allocated to PL 84-99 projects and \$85 million to HMP Projects. To date, 42 miles of levee work has been completed.

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 26 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 |
| 2 | Marysville | Done | Done | Done | Done | In Progress |
| 3 | RD 784 | Done | Done | Done | Done | In Progress |
| 4 | Feather River West Levee | Done | Done | Done | Done | In Progress |
| 5 | Sutter Bypass Wadsworth | Done | Done | Done | Done | In Progress |
| 6 | American River | Done | Done | Done | Done | In Progress |
| 7 | Sacramento River | Done | Done | Done | Done | In Progress |
| 8 | Davis | Done | Done | Done | In Progress | In Progress |
| 9 | Woodland | Done | Done | Done | In Progress | In Progress |

| No. | Urban Study Area | Historic Data Collection (TRM) | Initial Field Investigations (P1GDR) | Preliminary Analyses | Supplemental Field Investigations (SGDR) | Final Analyses & Report (GER) |
|-----|----------------------|--------------------------------|--------------------------------------|----------------------|--|-------------------------------|
| 10 | NEMDC East | Done | Done | Done | Done | In Progress |
| 11 | NEMDC West | Done | Done | Done | Done | In Progress |
| 12 | Natomas North | Done | Done | Done | Done | In Progress |
| 13 | Natomas South | Done | Done | Done | Done | In Progress |
| 14 | West Sacramento | Done | Done | Done | Done | Done |
| 15 | DWSC | Done | N/A | N/A | In Progress | Pending |
| 16 | South Sac Streams | Done | N/A | Done | In Progress | Pending |
| 17 | RD 404 | Done | Done | Done | Done | In Progress |
| 18 | RD 17 | Done | Done | Done | In Progress | In Progress |
| 19 | Bear Creek | Done | Done | Done | Done | In Progress |
| 20 | Calaveras River | Done | Done | Done | In Progress | Pending |
| 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 | Shima Tract | Done | N/A | N/A | In Progress | In Progress |
| 25 | SJAFCA upland levees | Done | N/A | N/A | In Progress | In Progress |
| 26 | Smith Canal | Done | N/A | N/A | In Progress | In Progress |

Notes:

- 1) In areas where detailed recent studies were performed in advance of the GER five-step process, initial field investigations and preliminary analyses were not performed and the Technical Review Memorandum (TRM) incorporated these recent studies instead.
- 2) In Progress means that the work has been initiated and is in various stages of completion. Most of the In-Progress SGDR work is nearing completion.
- 3) Pending means that the work is either waiting on the results of the SGDR to be completed or waiting to be scheduled to even out the workload.

ULE Summary

- Overall, ULE is 80% complete.
- Over 2000 interview records and historic reports have been obtained and reviewed. These records/reports have not currently been entered into the database but will be after completion of the ULE program.
- 400 miles of urban levees were surveyed using low altitude, high accuracy (+/- 6 cm) LiDAR survey techniques to generate topographic survey data.
- A bathymetric survey, to generate underwater topographic survey data, was performed for over 100 miles of river systems and integrated with the LiDAR survey to provide levee cross-section profiles that have both landside and waterside topography.
- 300 miles of levees were subject to Helicopter-based Electro-Magnetic Geophysical Survey (HEM). The HEM was performed to assist in assessing the subsurface stratigraphy between borings and determine the need for additional explorations.
- To supplement the HEM in no fly zones, over 100,000 feet of land based geophysical surveys were performed.
- For each of the 26 urban areas, detailed geomorphic studies and associated mapping were conducted to support the field explorations and subsequent analyses.
- Over 5,300 explorations along with approximately 15,000 laboratory tests have been performed as part of this effort for the 26 urban levee study areas.
- The West Sacramento GER, the template for all GERs, was finalized in May 2012.
- Based on local stakeholder input, additional drilling was completed in the Sacramento study area.
- The current delivery date for completion of all GERs is currently planned for the end of 2013.

- Close coordination of the GER efforts and the EIP projects for RD 17 and Sutter Butte continues.
- The 17th Independent Consultant Board meeting was held December 10-11, 2012. The GER tasks 1, 2, and 3 delivery packages for RD 404 were presented and reviewed.

NON-URBAN LEVEL 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 nine 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 | In Progress |
| 3 | Colusa Drain | Done | Done | Done | In Progress |
| 4 | Colusa North | Done | Done | Done | In Progress |
| 5 | Colusa South | Done | Done | Done | In Progress |
| 6 | Gerber | Done | Done | Done | In Progress |
| 7 | Knights Landing | Done | Done | Done | Draft Complete |
| 8 | Sutter Bypass | Done | Done | Done | In Progress |
| 9 | Wheatland | Done | Done | Done | In Progress |
| 10 | Woodland South | Done | Done | Done | Draft Complete |
| 11 | Ash Slough | Done | Done | Draft under review by DWR | In Progress |
| 12 | Berenda Slough | Done | Done | Draft under review by DWR | In Progress |
| 13 | Black Rascal/Fairfield | Done | Done | Draft complete | In Progress |
| 14 | Diverting Canal/Mormon | Done | Done | Draft under review by DWR | In Progress |
| 15 | ESB/Chowchilla | Done | Done | Draft under review by DWR | In Progress |
| 16 | Fresno River | Done | Done | Draft under review by DWR | In Progress |

| | | | | | |
|----|---------------|------|------|---------------------------|-------------|
| 17 | Gravelly Ford | Done | Done | Draft being revised | In Progress |
| 18 | RD 2064 | Done | Done | Draft submitted to DWR | In Progress |
| 19 | RD 2075 | Done | Done | In Progress | In Progress |
| 20 | RD 2095 | Done | Done | Draft complete | In Progress |
| 21 | SJRRP/CCID | Done | Done | Draft under review by DWR | In Progress |

NULE Summary

- Overall, Non-Urban Levee Evaluations are 65% complete.
- Over 8,000 records have been obtained and incorporated into a searchable Microsoft Access database.
- Over 7,000 points of interest have been recorded and incorporated in GIS-based maps that also link to the project records database.
- For the 21 non-urban areas, surficial geomorphic studies and associated mapping efforts were conducted. More detailed efforts were performed in selected areas. The surficial mapping was performed to aid the GAR, while the more detailed efforts were performed to aid field exploration efforts.
- Over 3,000 explorations along with approximately 6,000 associated laboratory tests were performed as part of this effort for the 21 leveed areas protecting populations greater than 1,000.
- No drilling occurred during this reporting period or is planned for the above reports.
- Laboratory testing is complete.
- Preparation of GDRs for NULE study areas is ongoing and nearly complete. Final GDRs for Sacramento River basin are complete; final GDRs for San Joaquin River basin are expected in the first quarter of 2013.
- Preparation of GORs is continuing, with the current delivery dates scheduled for the middle of 2013.
- Preparation of GORs continued for each of the study areas. The results presented in the GORs will support FMO, regional plans, and SJRRP studies.
- To support the CVFPP, the NULE effort has been/was redirected to prioritize support for the Flood System Repairs Program and nine Regional Plans.
- To support the Flood System Repairs Project (FSRP), contract task orders have been awarded to assist in assessing the need for repairs for areas identified in the GAR process. More information on the FSRP is presented below.
- The 17th Independent Consultant Board meeting was held December 10-11, 2012. The GOR meetings 1 and 2 delivery packages for Ash Slough, and GOR volume 2 for Woodland South were presented and reviewed.

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 levees 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).

- CVFED
To support Central Valley Flood Evaluation and Delineation Program, ULE and NULE data and preliminary analyses were used to establish the height at which a levee no longer meets criteria for stability and seepage for 2100 miles of levees.
- FSRP
In support of the FSRP, NULE and ULE information is being used to perform detailed assessment of potential repair sites. 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. Second Draft of the Field Reconnaissance Summary Reports was prepared to support the preparation of the pre-feasibility cost estimate (underway for Tier 1 critical and serious sites). Planning for outreach to LMAs is underway, with outreach expected to occur during the first quarter of 2013.
- San Joaquin River Restoration Program
Task Order SJ105 is being implemented during the reporting period and geomorphology mapping is in progress. Current work plans are being developed based being able to quantify if levees meet defined geotechnical criteria based on different flow regimes.

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 the Sutter Butte Area Flood Control Agency, the (LSJFS) Lower San Joaquin Feasibility Study, and RD 17.
- ULE/NULE continues providing additional supporting data to USACE for the LSJFS.
- ULE continues to review the SBFCA Feather River West design project.

TECHNICAL POLICY SUPPORT

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

- Vegetation management policies and 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?
- Burrowing Mammal Habitat Associations – How is burrowing mammal abundance related to the presence or absence of trees on levees?
- Levee Mammal Burrow Characterization and Grouting Efficacy – What are the seepage and stability implications? Do standard grouting methods seal burrows in a levee?
- Forensics – Has woody vegetation affected historic levee performance?
- In addition to the ULE five-step process, two seismic studies are being performed. The objective of the first study is to develop conceptual seismic remediation alternatives and associated costs for areas of 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 was prepared during this reporting period.
- Participated in various FloodSAFE FAXCTs (Functional Area Cross Coordination Teams).
- Continuing to provide support to the CVFED program.

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.

CENTRAL VALLEY FLOOD PROTECTION PLAN (CVFPP)

The CVFPP reflects a system-wide approach to protecting lands currently protected from flooding by the SPFC. The 2012 CVFPP was presented to the Board on schedule by January 1, 2012. The Board adopted the plan on June 29, 2012. The CVFPP is to be updated every five years. The 2012 CVFPP presents a State System-wide 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 is a DWR sponsored and locally lead planning process to develop a long-term vision of flood management in nine regions in the Central Valley. Elements of the RFMP's will include a Regional Flood Atlas, Regional Flood Management Priorities and a Regional Financial Plan. RFMP's will be integrated with the two basin-wide feasibility studies being lead by DWR.

- DWR has received and continues to review RFMP Directed Funding applications from the Feather River, Lower Sacramento/Delta North, and Lower San Joaquin/Delta South regions. The DWR Office of Chief Council has shared a template of the RFMP Directed Funding Agreements with the Department of General Services (DGS).
- DWR continues assisting regions with their RFMP Directed Funding applications.
- Flood Atlas comments continue to be reviewed and DWR is making revisions accordingly.

Basin-Wide Feasibility Studies

The two basin-wide feasibility studies (Sacramento River Basin and San Joaquin River Basin) have been initiated. The studies are to describe the State's flood management objectives in each river basin, refine the scale and location of system elements in the SSIA, inform development of

the CVFPP financing plan, integrate a system-wide environmental conservation strategy, define and describe a State preferred plan elements for State-federal feasibility studies, identify implementation roles and responsibilities for the SSIA, and recommend State actions to implement the SSIA.

- The Central Valley Flood Planning Office (CVFPO) continues developing post CVFPP adoption activities focusing on refining resources, problems and BWFS objectives. This effort includes preparation of technical memorandums for Resource Conditions and the System Elements Refinement.
- CVFPO participated in the second U. S. Army Corps of Engineers (USACE) sponsored Central Valley Integrated Flood Management Study (CVIFMS) Planning Charette on December 12, 13 and 14.
- CVFPO continues coordination with Conservation Strategy Development.

STATEWIDE INTEGRATED FLOOD MANAGEMENT PLANNING

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

Flood Future Report

California's Flood Future Report products will include: Technical Memoranda, Flood Future Report, Highlights, and Policy Brief.

- The draft California's Flood Future Highlights document has been released for public review.
- Work continues on the Policy Brief for the California's Flood Future report.
- Several Technical Memoranda, including the Exposure to Flood Hazards, Information Gathering, Risk Information Inventory, Finance, Integrated Flood Management, and Opportunities and Challenges memos are being prepared for inclusion in the California's Flood Future report.

Integrated Flood Management in the California Water Plan

The Flood Management Resource Management Strategy is being revised for inclusion in the Administrative draft of the California Water Plan.

- Work continues on incorporating the flood content into the Regional Reports.
- Work is continuing on developing flood content for the Volume 1 chapters.

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

Basin-wide Feasibility Study Integration

Staff and consultants presented the CVFSCS Draft Communication and Engagement (C&E) Plan to CVFPO and their consultants in December. In turn, CVFPO presented their CVFPP Phase 1: Communication and Engagement Work Plan. These two documents will provide the basis of C&E coordination on the BWFS.

Conservation Strategy Interagency Advisory Committee (IAC)

- The IAC Committee met in December. Staff provided updates on alignment between the Basin-wide Feasibility Study, Conservation Strategy, and Regional Flood Management Planning efforts, and the activities of the Conservation Strategy Development and Regional Permitting Subcommittees. Topics also included reconsideration of the FESSRO Proposal Solicitation Package (PSP) memorandum of agreement.
- Consultants provided an overview of the 2nd Working Draft Conservation Strategy, expected in early January. Finally, the committee was provided with an overview of the 2013 Conservation Strategy development and C&E schedules and activities.

Outreach

Consultants have created a draft Conservation Strategy fact sheet for general distribution with final edition expected by the end of the year. Staff is preparing a Fact Sheet on the Proposal Solicitation Package. Staff is also updating map graphics and providing changes to upgrade the FESSRO website.

California Water Plan

Staff attended a December 5th DWR workshop on California Water Plan (CWP) Flood Management – Resource Management Strategy (RMS), along with managers from SIWM and DFM.

Land Use Subcommittee of the Environmental Coordination Committee

At their recent meeting, staff briefed the committee on RAMP and the habitat proposal solicitation process.

2012 Statewide Watershed Management Forum

Staff attended the December forum in Folsom. The agenda included Existing Collaborative Tools and Program, Watershed Information Center Data Gathering; Collaboration, Partnering and Autonomy; Work Group Brainstorming; and Development of a draft Strategic Plan for Advancement of Integrated Watershed Collaboration.

Integrated Flood and Restoration Projects

- PSP Proposal evaluation
The Project Evaluation Team will meet on February 12 to evaluate the full proposals and come up with initial funding recommendations; these recommendations will be considered by the IAC at its February 20 meeting.
- DFM/FESB cost-sharing coordination
Staff met with DFM personnel on in December to discuss cost-sharing issues and coordination for projects that are receiving bonds funds under the EIP and seeking additional FESSRO (Floodway Ecosystem Sustainability Branch) bond funds. Staff also met with the DWR Legal team to discuss appropriate justifications for Direct Expenditures.

REGIONAL CONSERVATION PLANNING

Regional Advance Mitigation Planning (RAMP)

- In December, a small working group received an overview of the materials from the PSP applicants, the current PSP timeline, a proposed process for moving forward, and other DWR-prepared materials of potential on-the-ground projects (summaries and maps). The team was advised to use all available materials when making a decision about support.
- Members of the Pilot Subcommittee continue work on the criteria for selecting and on-the-ground site that support RAMP. The group anticipates testing the criteria with some example projects that were sent to DWR in response to the September 2012 PSP.

Regional Planning and Corridor Management Strategies

- The bi-monthly meeting of the Regional Permitting Subcommittee was held in December. The Subcommittee met with consultants to devise a Communications and Engagement plan in order to prepare a Feather River CPA HCP/NCCP Planning Agreement.
- Staff met with Yuba/Sutter NCCP/HCP staff on December. Topics for the meeting included understanding options for DWR becoming a signatory to the Yuba/Sutter plan or, as an option, being a special participating entity and how that action might affect the planning timeline. Staff also discussed funding that would be required and actions that could be included in the plan.

Lower Feather River Corridor Management Plan Permitting Subcommittee

The December meeting topics included an overview of 2012 activities; routine maintenance activities; proposed ecosystem restoration activities; permitting approach; and presentation on the relationship of the CMP and CVFPP Feather River Conservation Planning Area permitting approach.

- **Lower Feather River CMP Hydrology/Hydraulics modeling**
Staff attended a meeting in coordination with DFM and consultants, to review the revised draft H & H modeling for the Lower Feather R. CM Plan components.
- **Regional Planning Funding Applications**
Staff reviewed the Lower Sacramento/Delta North and Feather River applications and provided comments to CVFPO.
- **Flood Board Coordinating Committee:** Along with other DWR programs, staff provided an update to Regional Flood Management Plan leaders about environmental data and analysis available from the Conservation Strategy to support regional planning.

INVENTORY, ANALYSIS, AND MODELING

Meander Modeling of the Lower Feather River Corridor

The Migration Meander Modeling team met with consultants in late November and presented results of model runs investigating meander potential within the Lower Feather River Corridor Management Plan Study Area. A technical report summarizing methods and results has been requested by the Lower Feather River Corridor Management Plan group.

PRBO Conservation Science

Staff met with biologists from Point Reyes Bird Target Species.

OTHER CONSERVATION STRATEGY ACTIVITIES

Central Valley Hydrology Study (CVHS) – COE Workshop on Draft Unregulated Flow Frequency Curves (from Recorded Historical Hydrology)

Staff attended the Corps' briefing on the methods and results of their CVHS Unregulated Flow Frequency Curves development for DWR and CVFED. Next steps include using these unregulated flows to develop regulated peak flow frequencies as input into the CVFED models.

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 this month.

FUNDING ADVOCACY & AGENCIES' ALIGNMENT

No new information this month.