Agenda Item 6

REPORT OF ACTIVITIES OF THE DEPARTMENT OF WATER RESOURCES

By

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

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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 continues to conduct fall inspections of the approximate 1600 miles of Project levee. Inspectors continue to inspect CVFPB Encroachment Permits and other authorized activity. New tools for completing Field Investigation Reports and for inspecting encroachment permits continue to be developed. A preliminary map based viewer for permits, investigations, and inspections was recently demonstrated. Preparation of the annual report with a new layout and enhanced reporting has begun. Coordination continues with LMAs, CVFPB staff, and USACE staff on a variety of topics.

FLOOD PROJECT INTEGRITY/VULNERABILITY ASSESSMENT ACTIVITIES

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

Staff is working on summarizing the LMA information received by DWR on September 30 and beyond. This year the report is being redesigned to combine the DWR Levee Inspection report, as well as information from USACE's Periodic Inspections. DWR is targeting to submit the combined report to the Board by the end of December, 2012.

On behalf of the Yolo County Board of Supervisors, Chairman of the Board,
Jim Provenza, let the CVFPB know in a letter dated October 30, 2012, that they wish to return maintenance responsibilities of the 0.29 miles of Cache Creek right levee (known as Huff's Corner) to the State. The reasoning behind this relinquish request is that the surrounding levees in that area are maintained by the State, and easement rights of the affected properties belong to the State (as per deeds). The County does not have any records indicating that it holds easements sufficient to enable it to maintain the affected levees.

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

Information for November is not currently available.

HYDRO-CLIMATE ANALYSES

Hydrologic Modeling

Steady progress is being made on the Merced and Yuba models. We look forward to getting beta versions of the model to experiment with soon.

The PRMS team is planning an operational exercise for December using the soon-to-be completed Merced model. This exercise will include several of our San Joaquin valley reservoir operator partners and will allow end-users to get familiar with the new model and its features.

REAL-TIME DATA COLLECTION NETWORK

Snow Surveys and Snow Course Maintenance

- This month we will host our 58th annual Meeting of the California Cooperative Snow Surveys program. It will be held in Sequoia Kings National Park with the Kings River Water Association as our host agency. We expect over 50 representatives from dozens of cooperating agencies to be in attendance.
- The Snow Surveys section continues in summer snow course maintenance mode. We are working closely with the US Forest Service on the renewal of permits for several snow courses in the Sierra Nevada. A lot of effort is being made to update permits for the snow courses and sensors, especially those located in defined wilderness areas. Minimum Requirement Documents are now being required on what seems to be the most simple of maintenance requests. Without these documents approved and on file, we cannot access and repair many remotely located gages.
- Over the next few months, we will be considering which supplier will provide the next generation of radios necessary to transmit data to the CDEC servers. To assist, we are scheduling meetings with various manufacturers to learn more about the products available on the market.

HYDROLOGIC DATA MANAGEMENT

- The Snow Surveys section continues to collect, review, Quality Control, and enter Full Natural Flow (FNF), precipitation, snow, and reservoir storage data for thousands of locations statewide on a daily basis. With this data, staff continues to issue daily, monthly, and seasonal water condition reports on CDEC.
- During the month, Snow Surveys staff alone responded to over one dozen media requests. Other calls were handled by other Hydrology Branch staff.

- The mid-October snow storm throughout the Sierra Nevada provided an excellent early season test on many of our recently maintained or installed snow pillows. On the whole, the remote data collection system performed well during this first storm; most snow pillows recorded trace amounts of snow water content.
- Other locations showed some errors, which is good since it allows for staff to tend to these locations prior to the heavy snow pack of the winter.

BULLETIN 120 AND WATER SUPPLY INDEX FORECASTS

The last Bulletin 120 update was issued on June 7th and we will not issue another forecast until February 2013.

The final WSI forecast (from May 1) of the year can be summarized as follows:

Sacramento River Unimpaired Runoff Water Year

11.8 MAF (65% of Normal) at the 50% exceedance

Sacramento Valley Index (SVI)

6.9 (Below Normal) at the 50 percent exceedance

San Joaquin Valley Index (SJI)

2.2 (Dry) at the 75 percent exceedance

The next WSI forecast will be made in December.

HYDRO-CLIMATE ANALYSES

- Work continues on the University of California Task Orders for studies supporting climate change hydrology effort. In the past month, the State Climatologist has been in contact with UC Davis, UC Merced, and Scripps personnel to discuss project activity and the relation of project products to other programmatic activity. The UC Davis Study contact focused on coordinating analysis efforts with other program activities, including next steps in the Central Valley Flood Protection Plan (CVFPP) Climate Change Technical Work Group and 200-year Hydrology Framework. Discussions with the Scripps team were had on coordinating atmospheric river information into the 200-year Hydrology Framework and CVFPP work.
- The CVFPP Climate Change Technical Work Group is moving forward with another document describing the framework for climate change analyses in the execution of the CVFPP activities. The State Climatologist has been meeting weekly with the consultant team and has made email contact with members of the external science panel for further discussion and shaping of ideas. These efforts are continuing and progress is being made.
- The climate variability sensitivity study (CVSS) pilot associated of CVHS is progressing. The third basin addition is feasible and the United States Army Corps of Engineers (USACE) Sacramento District has chosen the American River. Contract modifications are in progress to enable this activity. Efforts are also underway to line up the appropriate internal review for CVSS. A new schedule has been proposed by USACE and the State Climatologist will meet with USACE to discuss.
- A draft outline of the framework for the 200-year hydrology with climate change is now being developed. Conversations are being had with the consultant team providing support and the scientists who are providing technical information for the framework. Current plans are to present the framework to the Department's Climate Change Technical Advisory Group in January.

- The State Climatologist is participating in workshops on extremes and climate change with members of federal agencies and the academic community. Efforts are leading to a prioritized list of projects to collaboratively pursue.
- The State Climatologist is providing time to participate in document and program review for other agency activity.

REAL-TIME DATA COLLECTION NETWORK

Coordination between NOAA, DWR and Scripps continues as the 21st Century Extreme Precipitation Monitoring project moves forward. Discussions continue on the scope of a second memorandum of understanding to further implement and refine efforts for this new network.

HYDROLOGIC DATA MANAGEMENT

The State Climatologist is working with contractors to coordinate programmatic activity related to data quality control procedures that are applicable across multiple programs within the Hydrology Branch.

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

- We continued to provide daily forecasts of reservoir inflows, river flows and water levels throughout California and in parts of Nevada in collaboration with the National Weather Service's (NWS) California-Nevada River Forecast Center.
- As is customary during the flood season (mid-October through mid April), we started issuance of two forecasts per day on October 15, 2012.
- Prepared to work around the clock to update forecasts and monitor real-time changes in California and Nevada's larger rivers during high water events.
- Issued river and tide forecast for 94 locations in California and in parts of Nevada.

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)

- Work continued on the 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.
- We continued internal coordination with USACE and DWR Central Valley Floodplain Evaluation and Delineation Program (CVFED).
- We continued resolving technical issues between CVHS and CVFED products.
- We continued coordination with the Central Valley Flood Planning Office for product integration and flood planning activities.

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.

- Mowing at Lake of the Woods is 5 percent complete (10 acres).
- Mowing is 100 percent complete at Sutter Bypass (85 Acres) and 100 percent complete at the O'Conner area of the Feather River (175 acres).
- Debris removal is 100 percent complete in Comanche Creek (2 trees).
- Debris removal is ongoing in seepage ditches in Sutter area (50 miles), ongoing in Little Chico Creek (4 trees), ongoing in Lindo Creek (3 trees).
- Beaver dam removal is ongoing in seepage ditches in Sutter area (50 miles) and is ongoing in Cherokee Canal.
- Spraying is 100 percent complete at the Colusa Weir (400 acres).
- Mulching in the Sutter Bypass is 100 percent complete (90 acres).
- Tree trimming in Tisdale Bypass is ongoing (1 mile).
- Spraying is 75 percent complete in Willow Slough (5 miles).
- Discing is ongoing in the Butte Slough Wildlife Area (35 acres).
- NEMDC Channel Evaluation (Hydraulic Model) is 70 percent complete. Evaluating potential vegetation management scenarios for NEMDC.
- Butte Creek Channel Evaluation (Hydraulic Model) is 85 percent complete and is undergoing QA/QC.
- Cherokee Canal Channel Evaluation (Hydraulic Model Highway 162 to Butte Sink) is 65 percent complete.
- Willow Slough Channel Evaluation (Hydraulic Model) is 40 percent complete.
- Wadsworth Canal Channel Evaluation (Hydraulic Model) is 40 percent complete.

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.

- Repair of gates and barricades is continuing in the Sacramento area.
- Debris Removal is ongoing at all pumping plants in Sutter Bypass.
- Construction is ongoing at Knights Landing Outfall Gates, Sutter Pumping Plants, Weir 2, and Willow Slough.
- Weir 2 – The contractor has finished up construction for the year and will resume work next year.
- Knights Landing Outfall Gates – An extension for time on permits is being negotiated to complete in water work by November 30, 2012. All effort is being made to finish construction by December 31 this year. Currently the upstream and downstream gates have been replaced on bays 1–5. Those gates are currently operating under power with response to the water level sensor in the Colusa Drain.

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.

- Mowing is 80 percent complete at MA13 (5 miles).
- Burning levee slopes are 90 percent complete at Cache Creek (27 miles).
- Rodent Program (poison, trapping) for all areas in Sacramento and Sutter is ongoing.
- Grouting rodent holes are 98 percent complete on Cache Creek (25 miles).
- Resloping the levee at Sacramento Bypass is 80 percent complete (0.5 miles).
- Levee pipe repairs at MA13 are ongoing (3 sites) and are ongoing at MA5 (2 sites).
- Construction for three erosion repairs was completed for MA9.

ENVIRONMENTAL INITIATIVES

DWR is responsible for planning projects in a way that avoids or minimizes environmental impacts, and for obtaining state and federal environmental permits and clearances for projects within the Operations and Maintenance Functional Area. Environmental Initiatives touches all aspects of this functional area and therefore is considered a close partner to the other maintenance elements and their activities. As such, it should be considered a part of each of the other major elements rather than a stand-alone element. Also, with DWR's established open collaborative process, various local, state, and federal agencies examine issues and develop integrated solutions to the complex environmental compliance requirements and resource

opportunities as flood control maintenance activities are undertaken. Components include developing and managing environmental programs, and managing mitigation requirements for lands and habitats developed or acquired by the Department to mitigate for flood management maintenance and improvement projects.

Knights Landing Outfall Gates Rehabilitation Project
FMO Maintenance Environmental Support Branch staff conducted a fish rescue Wednesday, September 19, for the Knights Landing Outfall Gates Rehabilitation Project during the de-watering of the cofferdam on the Sacramento River side of the gates. Six non-native fish were relocated during the effort.

Maintenance Area 9 (MA9) Erosion Repairs
Erosion repair construction at three sites in MA9 was completed in September. Remaining work includes implementing erosion control measures and mitigation plantings of willow and other riparian species at all three sites. The sites will be hydroseeded with native grass seed and flexible growth medium, and one site will have coir netting installed to prevent erosion. This work should be completed by the end of October.

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 SPFC. 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 State Plan of Flood Control 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)
- On September 20, 2012, CVFPB staff provided real estate certification package to USACE allowing awarding of contract for mitigation plantings for selected 2005-2006 PL 84-99 repair sites.

- At a September 28, 2012 meeting of CVFPB, DWR presented an informational briefing on current status and issues associated with the proposed 2005-2005 mitigation planting plans. With the acquired real estate certification, USACE will proceed with scheduled mitigation plantings at select repair sites. DWR has passed along to USACE and CVFPB the concerns of the local Reclamation Districts (RD) associated with these plans. The concerns are primarily that the maintenance criteria are too onerous. DWR and USACE will continue to work to resolve these issues, but the mitigation planting will occur this year (2012).

Sacramento River Bank Protection Project (SRBPP)

- Construction of setback levee in West Sacramento at Sacramento River Mile 57.2 has stopped for the season, and is in the process of winterizing the site for construction to resume in the spring. There have been delays resulting from improper slurry wall construction that necessitate extending the work into another construction season.
- Phase III SRBPP Planning has been put on hold while the USACE determines their commitment to the program with respect to funding and program goals.

Levee Stability Program

Erosion repair at San Joaquin River has begun, River Mile 71.5, Right Bank (SJR RM 71.5R). This repair includes environmental mitigation for terrestrial and aquatic habitat. Completion date is fall 2013.

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.

Key Activities

- Provided approximate 38 hours of technical assistance to local communities, other State agencies, and the public who had questions regarding the NFIP, Certified Floodplain Manager certification, and Federal grants.
- Completed Community Assistance Visits (CAV) reports for Colusa County, City of Sebastopol, and City of Susanville
- Met with DWR-FPM specialist from Sacramento, Fresno, and Los Angeles for the biannual meeting to coordinate statewide FPM activities including:
  - strategy for fulfilling the FEMA CAP contract for FY 2012-2013.
  - FloodSAFE, CVFPP and Regional Plans to ensure that these items are discussed in the Community Assistance Visits (CAV's).
  - Strategies to increase NFIP-CRS participation among NFIP.
- Gave a presentation on CRS Activity 510 - Floodplain Management Planning - at the California Emergency Services Association's annual conference.
- Provided technical assistance to the City of West Sacramento for their annual CRS recertification.
- Identified NFIP CA communities that would benefit the most, in terms of flood insurance premium savings, by participating in the CRS program; this information was provided to DWR regional floodplain management specialists to help prioritize outreach efforts.

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 Riverside County “High Priority” alluvial fan areas are 100% complete and “Remaining” alluvial fan areas are 90% complete.
- The completed models and delineated maps for Riverside County “High Priority” alluvial fan areas are still under review by Riverside County Flood Control District officials. The same products (i.e. models and maps for high priority AF areas) are delivered to JE Fuller (consultant) for independent QA/QC review.
- Two-dimensional models and Flood Hazard delineation maps for Ventura County “High Priority” alluvial fan areas are 100% complete and “Remaining” alluvial fan areas are only 5% complete.
- The completed models and delineated maps for Ventura County “High Priority” alluvial fan areas are under review by Ventura County Watershed Protection District officials. The same products are (i.e. models and maps for high priority AF areas) are delivered to JE Fuller for independent QA/QC review.

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.

On October 17th, the Floodplain Evaluation Branch (FEB) mailed letters to 90 cities and counties announcing the release and availability of Final Post-Processed LiDAR covering approximately 5,800 square miles of the Central Valley. Included along with the announcement letter was a county CVFED Data Availability Map, a CVFED Program Fact Sheet, and product sheets for each of the four currently available CVFED Products: Digital Aerial Photography, Initial Post-Processed LiDAR, Bathymetric and Field Surveys, and Final Post-Processed LiDAR.

Current status of the CVFED Hydraulic Model Development Project

Riverine Hydraulic Model Development (HEC-RAS):

- Upper Sacramento basin: 95 % complete
- Lower Sacramento basin: 93 % complete
- Upper San Joaquin basin: 97 % complete
- Lower San Joaquin basin: 83 % complete

Overland Hydraulic Model Development (FLO-2D):

- Upper Sacramento basin: 95 % complete
- Lower Sacramento basin: 90 % complete
- Upper San Joaquin basin: 97 % complete
- Lower San Joaquin basin: 90 % complete

In the month of October, FEB processed three requests from public agencies for data and transferred a total of 2,003 LiDAR tiles and 5,592 tiles of Aerial Imagery. The total amount of data transferred in October adds up to about 900 GB covering a land area of about 1,800 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.

2012 Flood Risk Notification

- More than 246,000 property owners of single parcels received notice.
- About 28,800 notices were mailed out the week of October 29 to owners of multiple properties.
- Each multiple-property owner notice includes a table listing the parcels and potential flooding sources.
- The percentage of surveys mailed out has been increased this year compared to previous efforts
- The surveys are intended to gather information of the program's effectiveness.
- Staff participated in outreach activities for the "2012 California Flood Preparedness Week" in October and "National Preparedness Month" in September.

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.

Urban Level Of Protection (ULOP)

The DWR "Design Team" has resumed work on the draft ULOP Criteria document with the passage of SB 1278 and AB 1965 (2012). Both laws have directed significant changes to the ULOP requirements, including a DWR directive to prepare 200-year floodplain maps for urban and urbanizing areas and new compliance dates for amendments to city and county general plan and zoning ordinances. A meeting with the" Work Group" has been scheduled for early December to re-engage the stakeholders and to review the legislative changes to the ULOP. The DWR Design Team will continue to work on revised criteria in coordination with the Work Group.

General Plan Amendments with CVFPP Adoption

Pursuant to Government Code Section 65302.9, cities and counties within the SSJV are required to amend their respective General Plans to contain data and analysis from the CVFPP. The timeframe for compliance is within 24 months of July 2013 (as per SB 1278). Stakeholders have expressed concern and difficulties in understanding the requirements and as a result, DFM has initiated work to develop guidance on what CVFPP information is required to meet the law. This guidance is a follow up to the DWR report "Implementing California Flood Legislation into Local Land Use Planning: A Handbook for Local Communities," dated October 2012.

FUNCTIONAL AREA 4 FLOOD PROJECTS & GRANTS

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

CENTRAL VALLEY FLOOD PROJECTS

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

USACE/CVFPB STUDIES SECTION

The State, represented by the Central Valley Flood Protection Board (CVFPB), participates and provides cost-share for feasibility studies with the United State 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 flood improvements for the Lower American River downstream of the Folsom Dam, Sacramento River downstream of Natomas Cross Canal, and Natomas Cross Canal to a 200-year level of flood protection. 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 a project management group meeting on October 18, 2012. USACE discussed the GRR schedule and anticipates holding a planning charrette to re-scope the GRR and finalize the schedule in response to USACE's new Planning Modernization under the 3x3x3 rule. The GRR is far enough along in the planning process that the charrette may not be necessary. USACE anticipates holding the planning charrette within the first two weeks of November 2012, if the charrette is deemed necessary. Updates on the charrette are anticipated for the next November 7, 2012, PDT meeting.

Frazier Creek Feasibility Study

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

- Nothing new to report this month.

Lower San Joaquin River Feasibility Study (LSJRFS)

This study is a coordinated effort by the State, USACE and San Joaquin Area Flood Control Agency (SJAFCA) to investigate feasible 200-year level flood protection alternatives and opportunities for floodplain restoration and recovery, recreational enhancements, and ecosystem restoration for the City of Stockton and surrounding areas. The cost estimate for the study is $10.6 million with a projected 2016 completion date.

- The Project Development Team (PDT) has proposed an estimated budget of $2.4 million ($2.7 million including contingencies) to complete the Study under the new mandated Planning Modernization with a proposed December 2014 completion date. These new targets will be presented to the USACE Executive team on November 1, 2012, for their concurrence. This budget is well within the budget set forth in the Feasibility Cost Sharing Agreement.

Merced County Streams Project-Bear Creek GRR
This project's purpose is to evaluate options to increase the level of flood protection from a 50-year event to 200-year event for the Merced Urban Area.
- Nothing new to report this month.

Rock Creek/Keefer Slough Feasibility Study
This study will generate an EIS/EIR and feasibility study to evaluate federal, State, and local interests in planning, designing, mitigating, and improving existing levee systems of 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 due to levee instability as well as identify and prioritize sites that will be presented in a final report. There will be no formulation of projects to correct deficiencies during this study.
- Nothing new to report this month.

Sutter Basin Feasibility Study
This multipurpose study aims to address levee improvement measures for existing levee systems as well as environmental restoration and recreation opportunities.
- On October 9, 2012, DWR and the Sutter Basin Flood Control Agency (SBFCA) attended the USACE Project Review Board to discuss the Study with senior USACE management. The Study is defining the National Economic Development (NED) Plan (the plan that optimizes federal interest) and how it relates to the Locally Preferred Plan (LPP). The goal is to justify recommending the LPP to USACE HQ in place of the NED plan. This allows USACE to take into account additional factors, such as life safety, critical infrastructure protection, and resiliency. SBFCA, at the meeting, indicated their support for the Study alternative that USACE is going to present to HQ as the Project Delivery Team's Tentatively Selected Plan.

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

- Nothing new to report this month.

EARLY IMPLEMENTATION PROGRAM (EIP) PROJECTS
EIP includes projects that are 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.

- Closeout documents are currently under staff review.

Reclamation District 17 - 100-Year Seepage Area Project (RD-17)
The RD-17 levees have unacceptably low factors of safety for 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.
- DWR is working with RD-17 to extend the funding agreement for two 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 site mitigation, agricultural use, and habitat.

- There are some open real estate issues currently being resolved.
- Project construction closeout documents are currently under staff review.

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 5+80 to 9+00) is underway and scheduled to be completed by the end of October 2012.

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, at the least, a 200-year 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 closeout NCC Phase Two to justify releasing additional funds to SAFCA.

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, at the least, a 200-year 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 will have the USACE complete the remaining work in 2014.

- SAFCA is in discussions with EIP for an approximate $30.5 million increase in the funding agreement amount due to increased project costs. SAFCA has submitted a revised work plan outlining the increased costs and EIP staff is reviewing the work plan.

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, and 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 currently under design and may include a large setback levee.

- WSAFCA is scheduled to complete the 65% plans and specifications in February 2013.
- The river mitigation planting began on September 4, 2012, and is scheduled to end on October 31, 2012.
- The Southport EIS/EIR final draft is out for review. WSAFCA will be seeking comments from all interested agencies, including DWR.

Sutter Butte Flood Control Agency, Feather River West Levee Design Project (SBFCA)
The Feather River West Levee Project is planned to repair 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 seeking management approval to execute a construction funding agreement for $56.78 million for critical levee improvements next to Yuba City.
- CVFPB approved submittal of a letter to initiate the USACE 408 permit review by USACE HQ.

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 are currently under construction. A Sacramento County Parks water pipeline is being relocated to above the flood elevation. The R6 cut-off wall installation is complete and the levee is being restored to USACE specifications. Both sites are planned to be completed by mid-November.
- Work on the Natomas Basin and American River design and construction component has been postponed indefinitely until federal authorization and funding has been approved.

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 currently 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 existing Folsom Dam structure to help the Sacramento region achieve a 200-year level of flood protection. The estimated completion for the JFP is October 2017.

- Construction – Phase III control structure construction completion is as follows: 20% of concrete pours, 10% of rebar placement, 7% of form work, 27% of tainter gates assembling, and 37% of bulkhead gates assembling.
- Design – Phase IV chute, stilling basin, and approach channel design is 95% complete. The design team continues to work toward 100% design. Phase IV Pre-Solicitation Industry Day #2 was held at Folsom City Hall on October 11. The event introduced prospective contractors to the scope and site conditions for the proposed construction and clarified any remaining contractor's questions. There also was a site tour of the ongoing JFP construction site. The Phase IV contract RFP will be distributed in December and is expected to be awarded in May 2013.
- LERRDs –DWR provided USACE the certification for right of entry for the Folsom Prison property for a Phase IV staging area on October 5, 2012. USACE will award a site preparation contract on November 5, 2012.
- The Supplemental Environmental Impact Report for the Folsom Prison staging area, stoplight, stilling basin drain was certified by CVFPB on September 28, 2012. A notice of determination (NOD) was filed with the State Clearinghouse on October 2, 2012.
- Water Control Manual Update – The Notice of Preparation (NOP) was filed Friday, October 12, 2012. Two public scoping meetings were held for NEPA and CEQA compliance, on October 15, 2012, at the Sacramento Library Galleria from 4:00 p.m. to 7:00 p.m. and on October 22, 2012, at the Folsom Community Center from 4:00 p.m. to 7:00 p.m.

Lake Kaweah Enlargement Project (Terminus Dam, Kaweah River Project)
The Lake Kaweah Enlargement Project was completed in 2006, and 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 2012. Initial estimates are approximately $1.5 million in creditable costs. DWR would expect to receive credit or cash reimbursement from USACE after approval of the crediting package.
- DWR is working with CVFPB staff and members to resolve the Davis Ranch mitigation site land (506 acres). Internal meetings were held after the September 28, 2012, Board meeting, and another meeting is scheduled for November 1, 2012, to discuss the matter.

Marysville Ring Levee Improvement Project
The Marysville Ring Levee Project will provide a 200-year or greater 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 construction and wall testing are approximately 95% complete and should be completed by November 2012.
- Phases 2A and 4A design will continue in November with construction beginning in the spring of 2013.
- Phase 2B design will begin the summer of 2013.
- Phases 2C and 3 designs will begin in the fall 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.

- USACE submitted the draft Integral Determination Report (IDR) to the South Pacific Division for review. The IDR is the first step to amending the PCA to include credit under Section 221 for in-kind contribution construction, and will require approval by USACE Headquarters and the Assistant Secretary of the Army.

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. The work is now approximately 90% complete. USACE, DWR, and SAFCA were regularly involved with on-site activities. Work was delayed, and may be finished by November 30, 2012.
- A kickoff meeting was held in mid-October for design work on Florin Creek. Improvements are planned for 2013 or 2014, depending on real estate requirements and utility relocation requirements.
- A 75-foot portion of earth slope created in the process of constructing the Morrison Creek floodwall, slipped on the night of October 6, 2012, creating a working hazard for the construction crew. Emergency measures were put in place, and a temporary entry permit was obtained from the private property owner to repair and replace the damaged fence, wall, and earth slope.

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.

- A contract to replace three piezometers removed for construction at the north slip repair site was awarded by USACE. The work is scheduled to be completed by November 30, 2012.

STATEWIDE FLOOD PROGRAMS

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

FLOOD CORRIDOR PROGRAM (FCP)

The 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.

- SAFCA Magpie Project-– A meeting was held on October 10, 2012, between SAFCA, Department of Toxic Substances Control, and Flood Corridor Program staff. The Magpie Project is temporarily on hold due to soil contamination on the proposed properties. DTSC and the McClellan Air Force are in negotiations on clean-up of the contaminated sites, but there was disagreement between DTSC and the Air Force on the source of contamination. FCP will meet with SAFCA to discuss these issues and determine proper steps for moving forward with the grant, in light of the contamination issues.
- FCP staff met with the Chief Counsel's Office to discuss how DFM can implement the DWR Greenhouse Gas Emissions Reduction Plan. It was concluded, the BMPs and mitigation measures, outlined in the PEIR for the CVFPP, will cover DFM actions.

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.

- Reviewing three funding reimbursement requests in the total amount of $2.4 million.
- No audit payments were processed. FCSP is in the process of verifying (retention) payments, pending reimbursement for five completed State Controller's Office (SCO) audit reports that were originally submitted to DWR back in 1992.
- 46 requests totaling $76.5 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.

LOCAL LEVEE ASSISTANCE PROGRAM (LLAP)

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

- The Director's Decision Memo (DDM) for the approval of the Final List of Grantees is currently in draft form being reviewed by Division management. The DDM will be put into a final version and sent to the Director for approval within the next few weeks.

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.

- A Project Solicitation Proposal for approximately $2.4 million was finalized and a corresponding Decision Memo is being routed to HQ for approval.
- Goldfields Feasibility Study – The contract was executed. A funding strip is being processed to commit funds for contract.

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.

- Two-page briefing documents have been prepared for the following programs. A briefing will be scheduled to present this information to senior DFM management and Deputy Director for concurrence prior to preparing the guidelines.
    - Urban Flood Risk Reduction (UFRR) Program
    - Non-Urban Flood Risk Management (NFRM) Program
    - Systemwide Flood Risk Reduction (SFRR) Program
    - Flood Control Subventions Program (FCSP)

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.
- The Lower Feather River Corridor Management Plan (CMP) preparation is continuing. The low-flow modeling contractor has completed data collection and is ready to begin modeling the stage effects at various storm levels, from 2-year up to 50-year recurrence intervals, under changed conditions in the channel resulting from the breach at Shanghai Rapids.

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.

- Flood Projects Office organized and facilitated a brown-bag session on October 5, 2012, where DWR experts made a presentation to staff on the California Levee Database and DWR Library of Flood Control Models.

DELTA FLOOD PROJECTS

This grants program works with over 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's 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 in support of the levee system and habitat development; improve the flood fight capability of the Delta through planning, cooperative efforts, encouraging the development of emergency response plans for each Delta island, and conduct studies and contract efforts necessary for program purposes.

DELTA LEVEES MAINTENANCE SUBVENTION PROGRAM

DWR staff, on behalf of 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 have been 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 11 reclamation districts totaling $1.4 million.
- The deadline to submit final claims is November 1, 2012.

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.
- Staff sent out work agreements for the district's review and signature. Once work agreements are received back, they will be routed to Board's executive officer to be executed.

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 for levee work in the Delta, of which about $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 slope stability, under- and through-seepage, erosion, 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 as in process or pending will be used to support the 2017 updates to these documents.

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

The overall status of the ULE program intermediate and final deliverables for the 25 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	In Progress	Pending
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	American River	Done	Done	Done	Done	In Progress
6	Sacramento River	Done	Done	Done	Done	In Progress
7	Davis	Done	Done	Done	In Progress	In Progress
8	Woodland	Done	Done	Done	In Progress	In Progress
9	NEMDC East	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)
10	NEMDC West	Done	Done	Done	Done	In Progress
11	Natomas North	Done	Done	Done	Done	In Progress
12	Natomas South	Done	Done	Done	Done	In Progress
13	West Sacramento	Done	Done	Done	Done	Done
14	DWSC	Done	N/A	N/A	In Progress	Pending
15	South Sac Streams	Done	N/A	Done	In Progress	Pending
16	RD 404	Done	Done	Done	Done	In Progress
17	RD 17	Done	Done	Done	In Progress	In Progress
18	Bear Creek	Done	Done	Done	Done	Pending
19	Calaveras River	Done	Done	Done	In Progress	Pending
20	Lincoln Village	Done	N/A	N/A	Done	In Progress
21	Brookside	Done	N/A	N/A	Done	In Progress
22	Rough and Ready	Done	N/A	N/A	In Progress	Pending
23	Shima Tract	Done	N/A	N/A	In Progress	Pending
24	SJAFCA upland levees	Done	N/A	N/A	In Progress	Pending
25	Smith Canal	Done	N/A	N/A	In Progress	Pending

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 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 79% complete.
- Over 2000 interview records and historic reports have been obtained and reviewed. These records/reports are not currently data based but will be after completion of the ULE program.
- 400 miles of the urban levees were surveyed using a low altitude high accuracy (+/- 6 cm) LiDAR survey 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 25 urban areas, a detailed geomorphic study and associated mapping effort were conducted to support the field explorations and subsequent analyses.
- Over 5,300 explorations along with 15,000 laboratory tests have been performed as part of this effort for the 25 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 RD 784, Chico, and RD17 study areas.
- Additional drilling is planned along the Sacramento River study area.
- The current delivery date for completion of all GERs is the middle of 2013.
- Laboratory testing is closing for the urban area of DWSC.

- Close coordination of the GER efforts and the EIP projects for RD 17 and Sutter Butte continues.

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 1,490 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	In Progress	In Progress
12	Berenda Slough	Done	Done	In Progress	In Progress
13	Black Rascal/Fairfield	Done	Done	Draft complete	In Progress
14	Diverting Canal/Mormon	Done	Done	In Progress	In Progress
15	ESB/Chowchilla	Done	Done	In Progress	In Progress
16	Fresno River	Done	Done	In Progress	In Progress
17	Gravelly Ford	Done	Done	Draft complete	In Progress
18	RD 2064	Done	Done	Draft complete	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	In Progress	In Progress

NULE Summary

- Overall, Non-Urban Levee Evaluations are 64% complete. The SJRRP support has reset the percent 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, a surficial geomorphic study and associated mapping effort 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 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.
- Most of the laboratory testing is complete.
- Preparation of GDRs for NULE study areas is ongoing and nearing completion. Final GDRs for Sacramento River basin expected by end of calendar year; final GDRs for San Joaquin River basin expected shortly thereafter.
- Preparation of GORs is continuing, with the current delivery dates scheduled for the middle of 2013.
- The Pilot GOR for Woodland South is complete and the Pilot GOR for Gravelly Ford is nearly complete. The purpose of the pilot GORs was to develop the GOR process and obtain independent consulting board approval of such process.
- 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.

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. First Draft of the Field Reconnaissance Summary Reports was prepared for the implementation of the pre-feasibility cost estimate.

- San Joaquin River Restoration Program
  Task Order SJ105 is being implemented during the reporting period and geomorphology mapping is in progress. Three levee segments were identified for subsurface work plans for field investigations (left and right banks of Eastside Bypass between Sand Slough and Mariposa Bypass and the left bank of San Joaquin River from Chowchilla Bypass bifurcation structure upstream for about 5 miles).

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 and USACE are continuing the process of providing data to SAFCA for their assessment of the American Rivers Common Features Project (without Natomas) study area.
- 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 Atlas, Regional Flood Management Priorities and a Regional Financial Plan. The regional plans will be integrated with the two BWFS's.

- DWR continues to meet with the regional partners to develop teaming strategies and to provide guidance regarding the RFMP process. Regions have discussed combining and a Lead Local Agency has been identified for each region.
- The Regional Flood Management Plan (RFMP) team continues to receive preliminary draft Directed Funding Applications from lead local agencies. DWR is working collaboratively with regional partners by offering early feedback on draft application content (cost, scope and schedule).
- DWR continues to provide technical assistance to RFMP local agencies in response to requests for information and geospatial data.

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, indentify 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.
- A coordination meeting between the CVFPO and the USACE was held on October 16 to discuss Federal participation in post-adoption implementation of the 2012 CVFPP in preparation for the December Corps sponsored Central Valley Integrated Flood Management Study (CVIFMS) Planning Charette.
- The monthly CVFPP Implementation Coordinating Committee Meeting was held October 24 with the Board, representatives from the Division of Flood Management, and various local Stakeholders to discuss integration of RFMP's and the BWFS.

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.
- Work continues on the California's Flood Future Highlights document for the California's Flood Future report.
- Work has begun 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 Administrative draft of the Integrated Flood Resource Management Strategy has been completed.
- Work continues on incorporating the flood content into the Regional Reports.
- Work has begun 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

In coordination with CVFPO, staff discussed integration of the Basin-wide Feasibility Studies and the Conservation Strategy. Meetings have focused on integrating planning timelines, communications and outreach planning, and developing joint measurable objectives.

Interagency Advisory Committee

Staff summarized the integrated planning timelines for the Basin-wide Feasibility Studies and the Conservation Strategy, which helped agencies understand the linkages between both efforts. Staff is developing a template agreement to ensure that PSP-funded projects will provide mitigation for flood projects.

Conservation Organizations Briefing

In coordination with DFM, staff briefed representatives from key conservation organizations (NGOs) on CS/CVFPP alignment, integrated objectives, and planned communication and engagement. NGO representatives presented some preferred approaches to developing measurable objectives.

Proposal Solicitation Package (PSP)

The first PSP under the Central Valley Flood System Conservation Framework and Strategy Guidelines closed in October, with 41 proposals received. The Project Evaluation Team is currently reviewing proposals.

Outreach

Staff has continued their outreach to inform others about the program activities and plans. These include presentations at the Interagency Flood Management Collaborative, San Joaquin River Conference and Northern California Conservation Planning Partners. This latter group is a regularly meeting forum for existing NCCP/HCP leaders to coordinate planning in northern California.

REGIONAL CONSERVATION PLANNING

Regional Advance Mitigation Planning (RAMP)

Statewide Framework and Manual

The cover letter to the draft Statewide Framework is circulating. The Directors of Department of Water Resources, Department of Fish and Game, State Water Quality Control Board, and Federal Highway Administration have signed the cover letter to the draft Statewide Framework. Caltrans and US Environmental Protection Agency will be the next signatures.

Regional Planning and Corridor Management Strategies

Lower Feather River Corridor Management Plan

Staff attended the Lower Feather River Corridor Management Plan Work Group in October. The meeting included discussion on the 2012 activities; status of the CMP; future conditions hydraulic analysis; Shanghai Rapids breach assessment; meander modeling; routine maintenance activities; update on the conceptual restoration plans; and the permitting subcommittee activities.

Regional Permitting

The interagency regional permitting team, coordinated by DWR, has recommended initiating a pilot regional permitting process in the Feather River region, after evaluating multiple regions within the CVFPP planning area.

INVENTORY, ANALYSIS, AND MODELING

Fine-scale vegetation mapping

- The Chico State, Geographic Information Center continues work on fine-scale mapping on target for late 2013 delivery.
- A map viewer has been provided for the medium-scale vegetation map and links added to the FESSRO website: http://www.water.ca.gov/floodsafe/fessro/

Other modeling

Contractors continue work on refining habitat indicators, developing 3-dimensional levee anatomy, and developing test models for sensitive species and habitat relationships.

Targeted Conservation Planning

Staff continues coordinating conservation planning with several interagency groups, including the Riparian Mammals Technical Group and the Bank Swallow Technical Advisory Committee.

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

CALIFORNIA FLOOD PREPAREDNESS WEEK

- The first California Flood Preparedness Week (CFPW),a joint effort by USACE, FEMA, NOAA, DWR, CalEMA, and Sacramento County to promote flood awareness and flood disaster preparedness activities, was a success.
- As of November 1st, 45 separate entities had promoted CFPW using social media (Facebook and Twitter) or linked to the website: http://www.water.ca.gov/ca-flood-preparedness/. Other agencies have also asked how to participate in leading events in their region and promote CFPW next year.
- Aside from the public events, briefings by CFPW sponsor agencies were held within their own organizations, including a follow-up briefing to a legislative staff member who works for a senator involved with disaster preparedness.
- USACE Brigadier General Michael C. Wehr, commander of the South Pacific Division, sent an email to every USACE employee in CA, NV, UT, CO and AZ to share information about California's flood preparedness week and to remind them of the risks of flooding.
- Overall, the effort helped government agencies and other interested groups disseminate the important message of flood risk awareness and preparedness.

FUNDING ADVOCACY & AGENCIES' ALIGNMENT

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

No new information this month.