

Implementing the FloodSAFE California Initiative

An Integrated, System-Wide Approach for Sustainable Flood
Risk Management in California





Major flooding is a threat to all Californians. Catastrophic flooding in the Central Valley has been documented since the mid-1800s. Over the years, local, State, and federal entities have constructed a large network of levees, pumping plants, bypasses, dams, and other flood management structures to help control and direct damaging flood waters. Construction of

flood control structures along the Sacramento and San Joaquin River system started shortly after California became a State and continued through the mid-1950s, so much of the infrastructure today is quite old. Most of the levees are not built to modern day engineering standards and have a history of poor performance and low reliability. This condition, along with increased development in the floodplain, has resulted in greater flood damage as documented in the February 1986, January 1995, and January 1997 flood events.

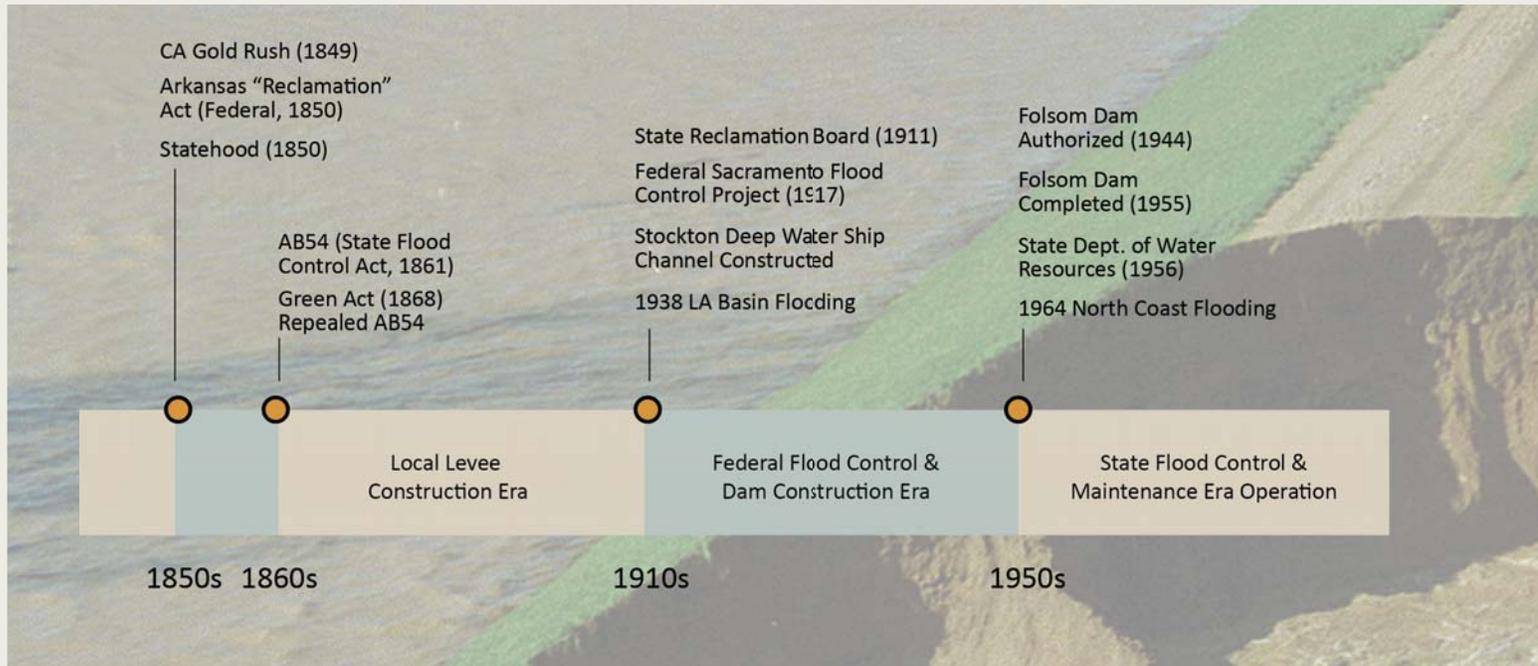


The 1964 North Coast Flood killed 25 people and caused severe damage to North Coast infrastructure.

In the 2003 *Paterno v. State of California* case, the State Supreme Court held the State of California liable for flood-related damages caused by a levee failure; thus increasing the State's liability for flood damages in the Central Valley. In late 2005, the United States Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA) started development of coordinated

federal flood management programs and policies through the Interagency Flood Risk Management Committee. These efforts, prompted in part from the aftermath of the flooding in New Orleans, are resulting in stricter standards for vegetation management, levee design and construction, operations and maintenance, floodplain mapping, and stringent levee accreditation requirements under FEMA's Map Modernization Program.

A Brief History of Flood Protection Actions in California





The 1938 Los Angeles Basin Flood killed 115 people and destroyed over 7,000 homes.

FloodSAFE California

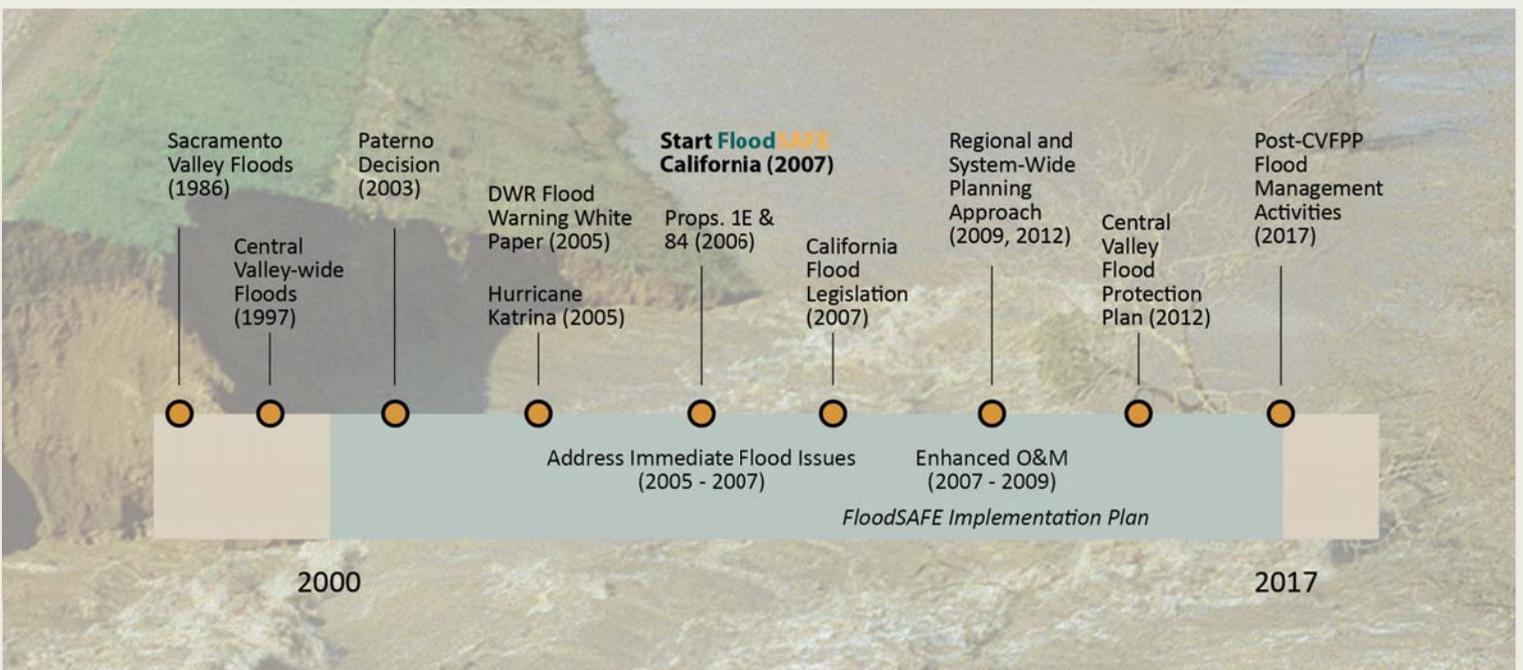
In response to the flood management challenges stated previously, Governor Schwarzenegger drew attention to the State’s flood problem in January 2005, calling for improved maintenance, system rehabilitation, effective emergency response, and sustainable funding. In a white paper entitled *Flood Warnings: Responding to California’s Flood Crisis*, the California Department of Water Resources (DWR) outlined the flood problems that California faces and offered specific recommendations for administrative action and legislative changes.

The unprecedented funding through Propositions 1E and 84 in November 2006 demonstrated the State’s commitment and the public’s willingness to invest in flood management solutions. These propositions and other emergency appropriations, such as Assembly Bill 142, place California flood management funding at an all-time high.

In 2007, DWR formulated a comprehensive initiative called “FloodSAFE California” to address the State’s flood management challenges.



The four elements of FloodSAFE California.



Accomplishments

FloodSAFE California included the initial goals of obtaining funds for flood system repairs and improvements, repairing critical erosion sites, addressing the backlog of statewide subventions claims, and conducting inspection and maintenance of levees and channels in the Central Valley.

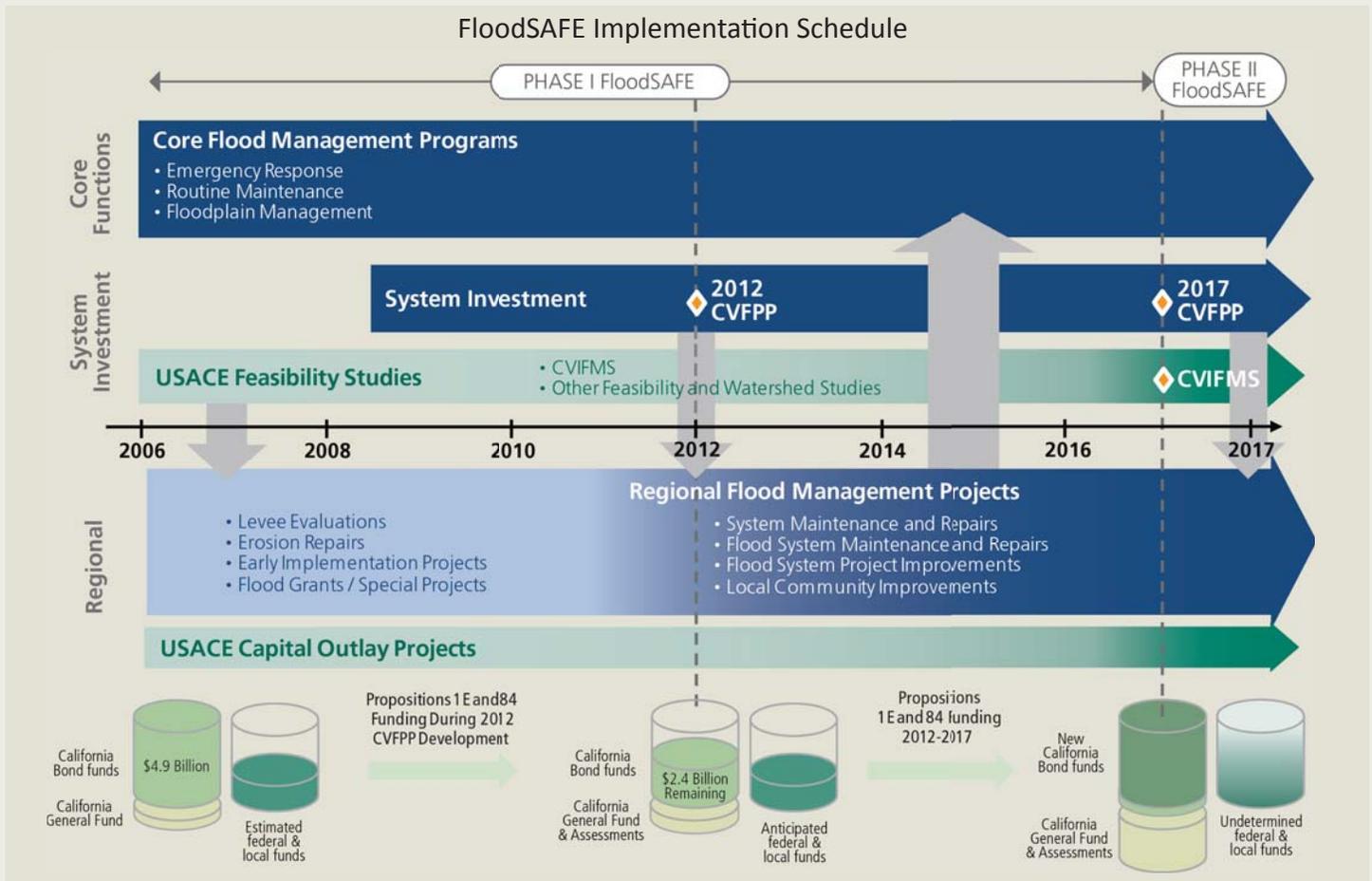
Because the critical erosion sites along the Sacramento and San Joaquin rivers posed an immediate threat of flooding, repair of these sites became the highest priority.

After addressing the immediate needs of the flood system, the Program focus was expanded to meet broader Program objectives, which included initiating projects to improve **core flood management programs**, e.g., Statewide Flood Emergency Response, Maintenance of the Flood Control System, and Management of Floodplains. Other objectives include the work necessary to evaluate and prioritize **system-wide investments**, and funding and supporting **regional projects**.



Over 100 critical erosion sites along the Sacramento and San Joaquin rivers were repaired.

Some of these **Program Accomplishments** efforts included funding Early Implementation Projects (EIPs) and increasing funding for improving Delta levees. During this time, the FloodSAFE strategic plan was drafted and DWR organized its resources into seven Functional Areas for evaluating and implementing major flood improvement throughout the State. DWR also developed a comprehensive implementation plan that lays out the work structure within DWR and its alignment with federal partner's, USACE, risk management structure.



Initial Accomplishments

- 33 critical erosion sites were repaired in 2005.
- In 2006, an additional 24 sites were repaired.
- The \$160M backlog of subvention claims was reduced to \$5M.
- State levee inspectors were supplemented with a team of engineers, and ratings procedures were standardized and made consistent with USACE procedures.
- Three critical local levee repairs were funded and completed under a broader new grant program developed for funding local levee evaluations and repairs outside the State-federal levee system.
- A package of flood reform legislation enacted in 2007 set new flood protection standards for urban areas, established a framework for Central Valley flood planning, and created linkages between State and local planning in floodplains.
- FloodSAFE Strategic Plan and Implementation Plan were developed.

Program Accomplishments

Improve Core Flood Management Programs

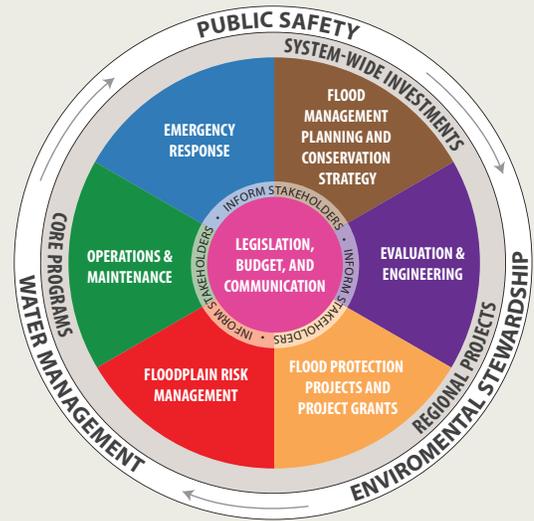
- 243,000 tons of rock have been stockpiled in the Delta for a flood emergency.
- The best available 100-year and 200-year floodplain maps and Levee Flood Protection Zones maps were developed and publicly disseminated.
- New building code requirements for residential structures and schools in the Central Valley 200-year floodplain were developed and submitted to the Building Standards Commission.
- About two million cubic yards of sediment was removed from Tisdale Bypass and one million from the Fremont Weir.
- Comprehensive flood emergency training and exercises were developed and are being implemented.
- Added 50 flood and water supply data forecasting sites.
- Over 300,000 Flood Risk Notifications mailed.

Regional Projects

- Additional 77 critical erosion sites have been repaired, including 53 sites by USACE under PL 84-99.
- Over \$500M has been provided for EIPs with construction underway or completed on more than 20% of the urban levees.
- Funding for Delta levees has tripled to about \$60M per year.
- Delta Risk Management Strategy was completed.
- Geotechnical evaluation of 500 miles of urban levees is 70% completed.
- Evaluations of 1,600 miles of non-urban Central Valley levees have been initiated.
- Construction on Folsom Dam New Spillway has commenced and is on schedule for completion in 2015.
- Six flood and agriculture/habitat projects completed.

System-Wide Investments

- Federal feasibility studies are underway for Sacramento, Yuba County, and Sutter County – with new studies initiated for the Stockton-Lathrop area and West Sacramento.
- Reports describing the State Plan of Flood Control and the Flood Control System Status have been drafted.
- Central Valley Flood Protection Plan development is underway using a collaborative public process.
- Conducting stakeholder outreach to support planning efforts.



To prepare for the implementation of the FloodSAFE Initiative, DWR resources were organized and aligned into seven Functional Areas.

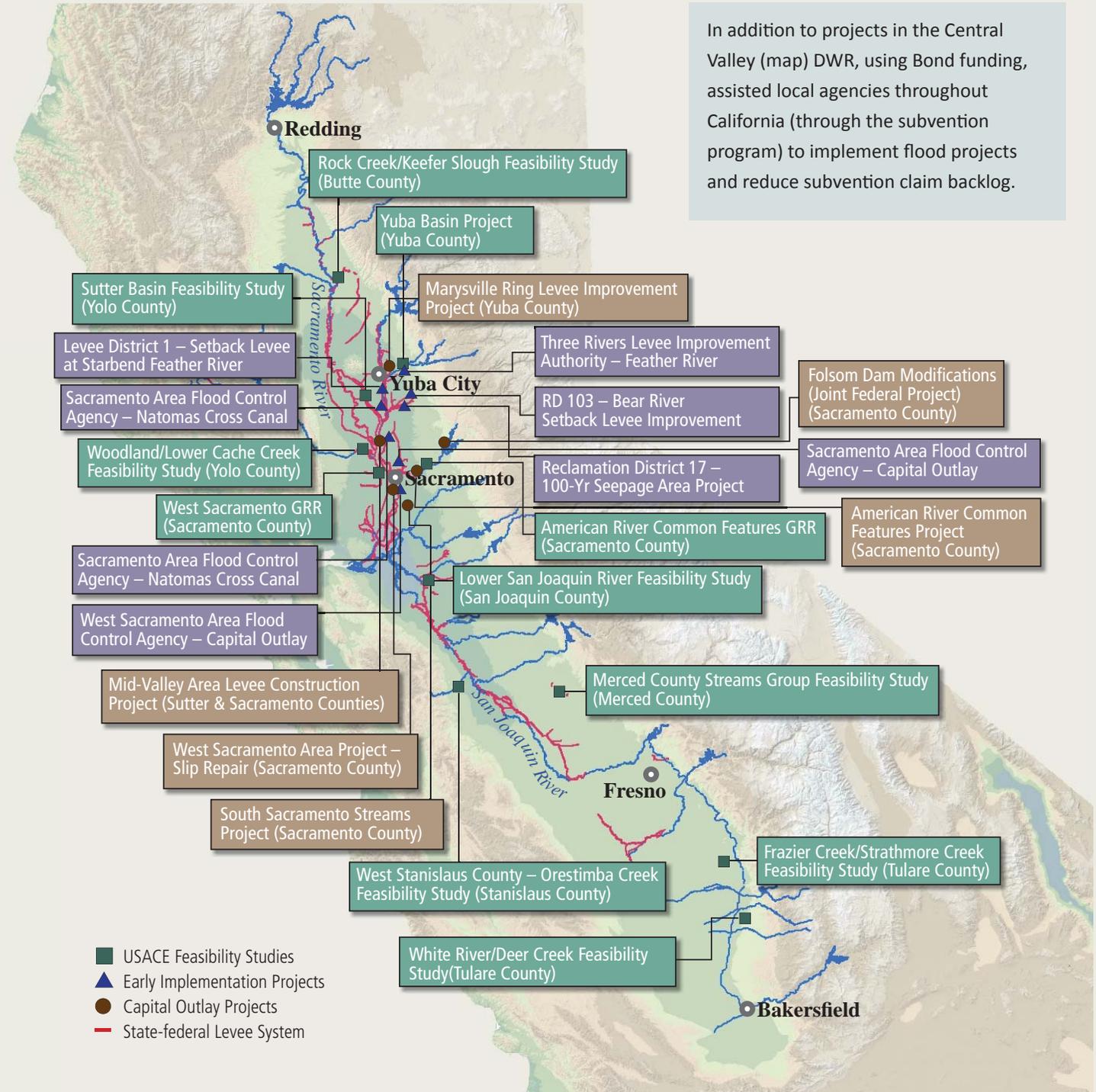
Flood Legislation Overview

| Legislation | Major DWR Flood Initiative | Date | Status |
|-------------------|---|---|------------|
| SB5 | <ul style="list-style-type: none"> • Develop preliminary 100-yr and 200-yr floodplain maps for Central Valley. • Propose building code standards in areas protected from a 1-in-200 chance of flooding event. • Develop a Central Valley Flood Protection Plan (CVFPP) for adoption by the Central Valley Flood Protection Board (CVFPB). • Urban Level of Flood Protection (1-in-200 chance of flooding) for Central Valley will apply to future development in urban areas. | Jul 2008 Jan 2009 Jan 2012 Jul 2012 – 2015 | x x |
| SB17, SB5 | <ul style="list-style-type: none"> • Document and update status of State Plan of Flood Control (SPFC). | Jul 2012 | x |
| AB5 | <ul style="list-style-type: none"> • Develop new local cost share formulas for repairs/improvements. | Jan 2010 | x |
| AB70 | <ul style="list-style-type: none"> • Cities and counties share costs associated with potential flood damages in previously undeveloped areas protected by SPFC. | | |
| AB156 | <ul style="list-style-type: none"> • Send annual flood risk notifications to property owners protected by levees. • Prepare project levee status reports. | Sep 2010 Jan 2009 | x x |
| AB162, SB5, AB156 | <ul style="list-style-type: none"> • Cities and counties amend their general plans. | 2012-14 | |



Regional Project Implementation

Following the adoption of the 2006 flood bonds, DWR has taken the initiative to support local flood risk reduction projects, regional projects through the USACE's Feasibility Studies and Capital Outlay Projects, as well as establishing a State EIP Program. The largest projects require a feasibility study to determine the economic feasibility of the project prior to implementation.





Financing Flood Risk Reduction

Summary of 2006 Flood Bond Through December 2010

About \$5 billion was made available for flood risk reduction throughout California.

| | Prop 1E | Prop 84 | Props 1E + 84 |
|---------------------------------|-----------------|---------------|-----------------|
| Bond Totals | \$4,090,000,000 | \$800,000,000 | \$4,890,000,000 |
| Appropriated (through FY 10/11) | \$2,445,346,984 | \$745,343,488 | \$3,190,124,472 |
| Remaining Bond Funds | \$1,644,653,016 | \$54,656,512 | \$1,699,309,528 |

Flood Risk Reduction Projects Through December 2010

Over \$4 billion of local, State, and federal funding has been committed and spent for flood risk reduction projects through 2010.

| Project Type | Budget (in millions) | | | |
|---|----------------------|--------------|-------------------|----------------|
| | State | Local | Federal | Total |
| Critical Levee Repairs | \$160 | | \$(160)* | \$160 |
| Early Implementation Program (EIP) | \$626 | \$211 | \$(544)** | \$837 |
| USACE / CVFPB Capital Outlay Projects | \$573 | \$293 | \$1,622 | \$2,489 |
| USACE / CVFPB Feasibility Studies Program | \$16 | \$18 | \$34 | \$68 |
| Subvention Program | \$156 | \$67 | \$343 | \$566 |
| Sub Total | \$1,531 | \$589 | \$2,543*** | \$4,120 |

* Funding for the Critical Levee Repairs has come from DWR, but DWR is seeking \$160 million in federal reimbursement.

** Federal funds for the EIP projects have not yet been included, but DWR is seeking \$544 million in federal cost share credit.

*** Include future federal reimbursement.

2011-2012 Budget Change Proposal

To continue working on flood risk reduction projects DWR has requested \$186.8 million for Fiscal Year 2011-2012, including \$121.9 million for Capital Outlay Projects – see list below.

| Capital Outlay Projects | Non-Capital Outlay Projects |
|---|---|
| <ul style="list-style-type: none"> American River Flood Control Project Common Elements Feather River Early Implementation Project Frazier Creek/Strathmore Creek Feasibility Study Lower San Joaquin River Marysville Ring Levee Reconstruction Project Merced County Streams Project, Bear Creek Unit Mid-Valley Levee Reconstruction Project Rock Creek/Keefer Slough Feasibility Study South Sacramento County Streams Sutter Basin Feasibility Study System-Wide Levee Evaluations and Repairs West Sacramento Project West Sacramento Project (General Reevaluation Report) West Stanislaus County, Orestimba Creek Project White River/Deer Creek Feasibility Study Yuba River Basin Project | <ul style="list-style-type: none"> Central Valley Floodplain Evaluation and Delineation State-federal Flood Control System Mod. (EIP) Floodway Corridor Program Yuba-Feather Flood Protection Program North Delta Flood Control and Ecosystem Restoration Project Delta Risk Management Strategy (DRMS) / Delta Knowledge Improvement Program (DKIP) Conservation Strategy for FloodSAFE Central Valley Flood Protection Plan |



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