

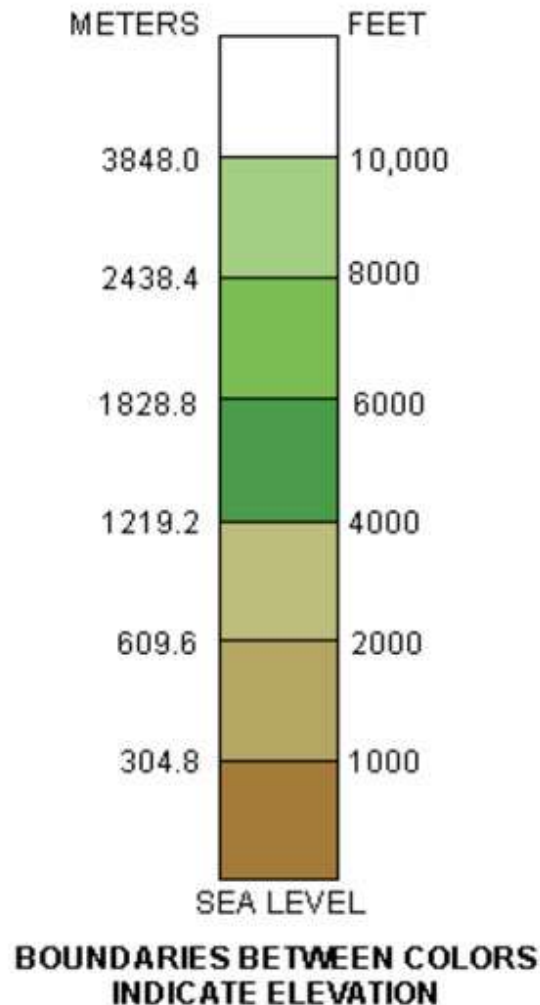
Flood Risk Management Activities in California's Central Valley

Floodplain
Management
Association
Conference
San Diego

by

Rod Mayer

Sept. 7, 2011



Presentation Overview

- Background
- California Legislation
- Levee Database
- Levee Design Criteria
- Levee Evaluations
- Early Implementation Program
- Emergency Planning Assistance
- Floodplain Risk Communication
- Nonstructural Programs
- *NCLS Recommendation*
 - *NLD*
 - *Standards, Peer Review*
 - *Evaluations (Fund)*
 - *Rehab, Improvement, Mitigation Fund*
 - *State Grants for Evacuation Plans*
 - *Risk Communication Program*
 - *Rewards for Superior State Programs*

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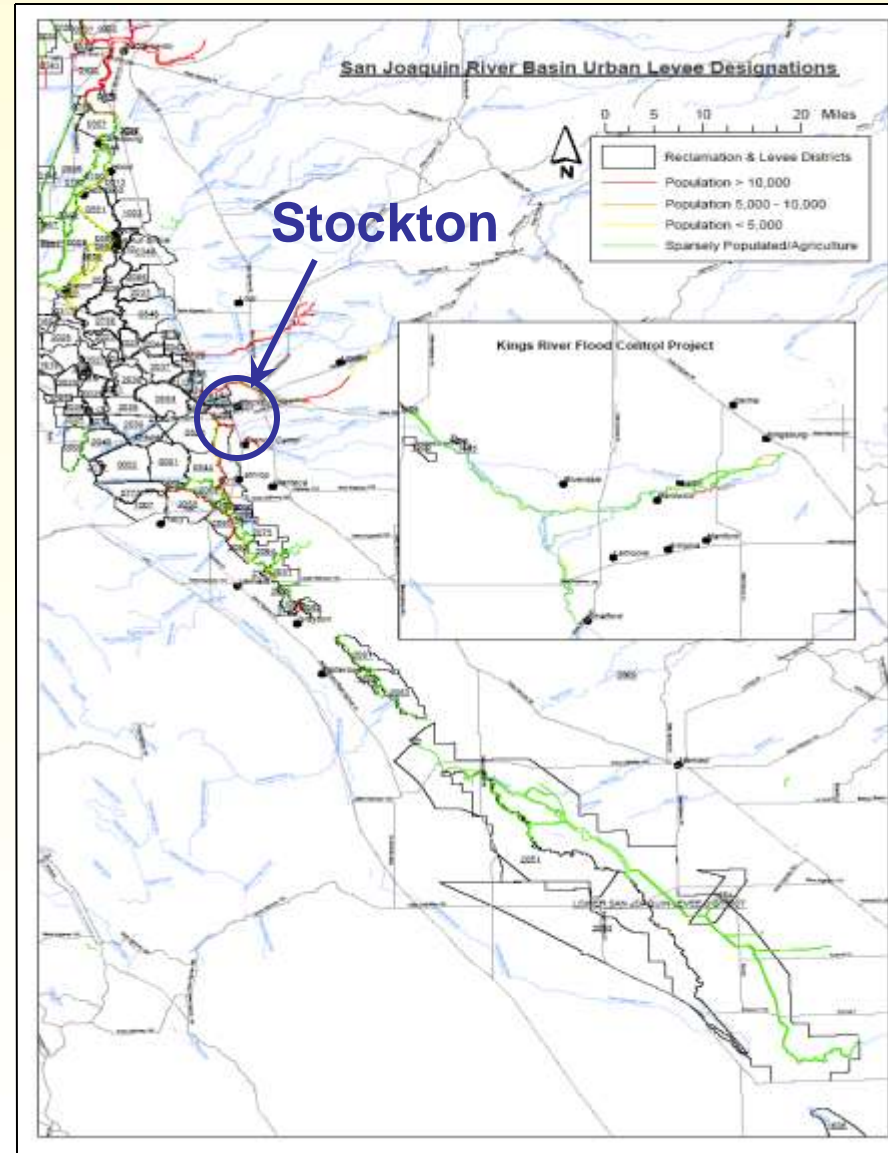
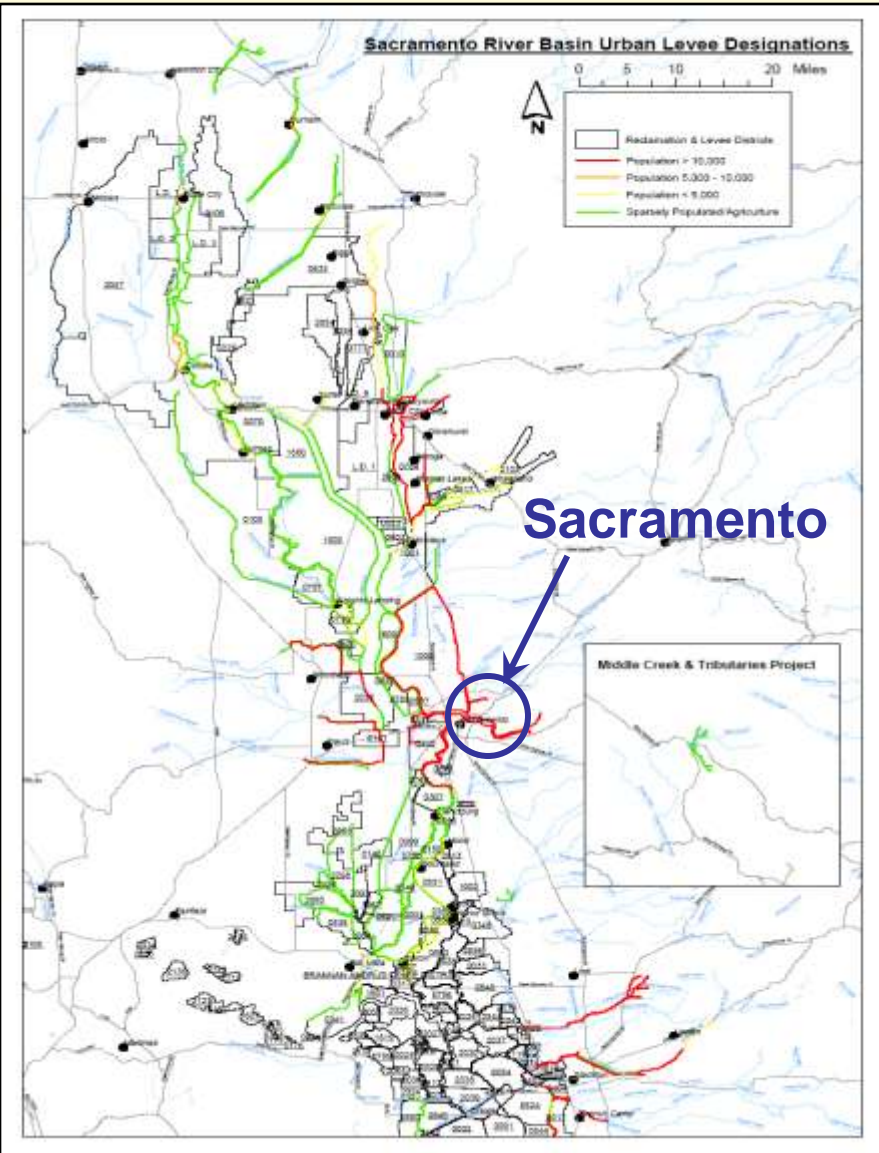
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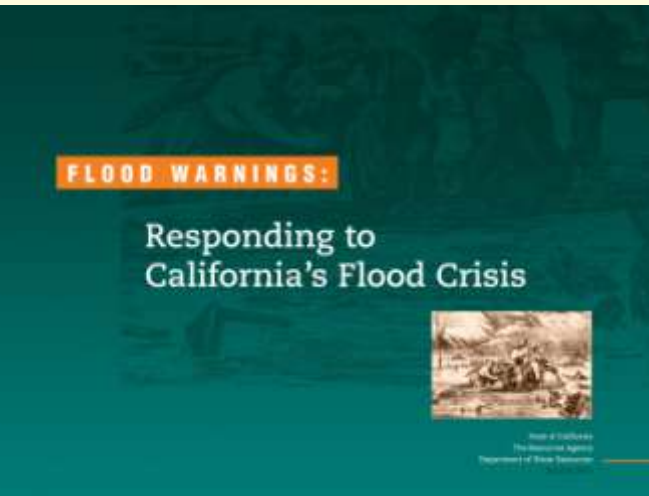
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Sacramento Valley

San Joaquin Valley



The System's Key Challenges



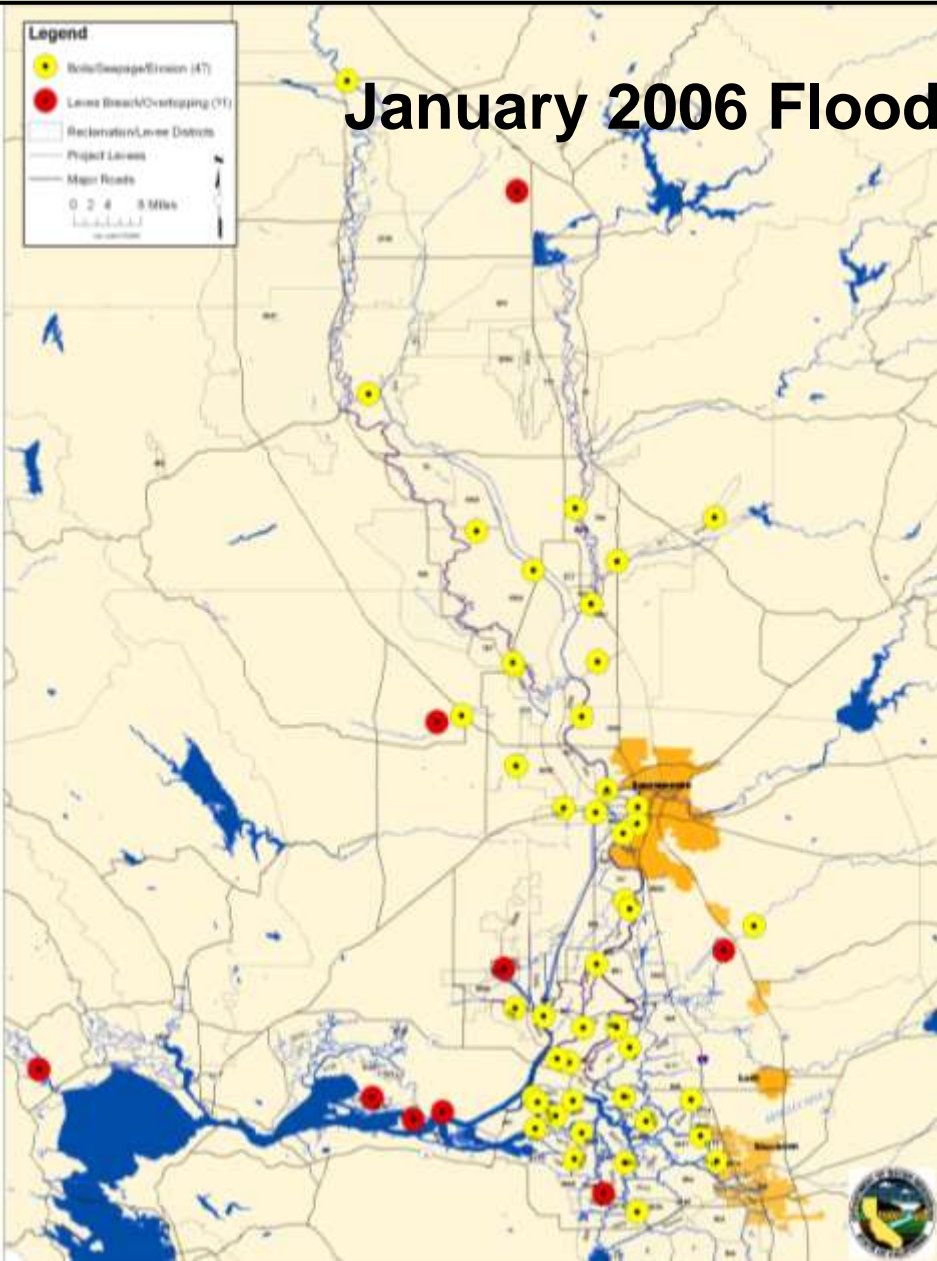
- **Aging Infrastructure**
- **Increasing development in floodplains**
- **Court decisions have increased the State's liability**
- **State, local, and federal funding for flood management has declined**

January 2006 Flood

Legend

- Bolt/Seepage/Creep (47)
- Levee Breach/Overtopping (31)
- ▭ Reclamation/Levee Districts
- ▭ Project Levees
- Major Roads

0 2 4 8 Miles

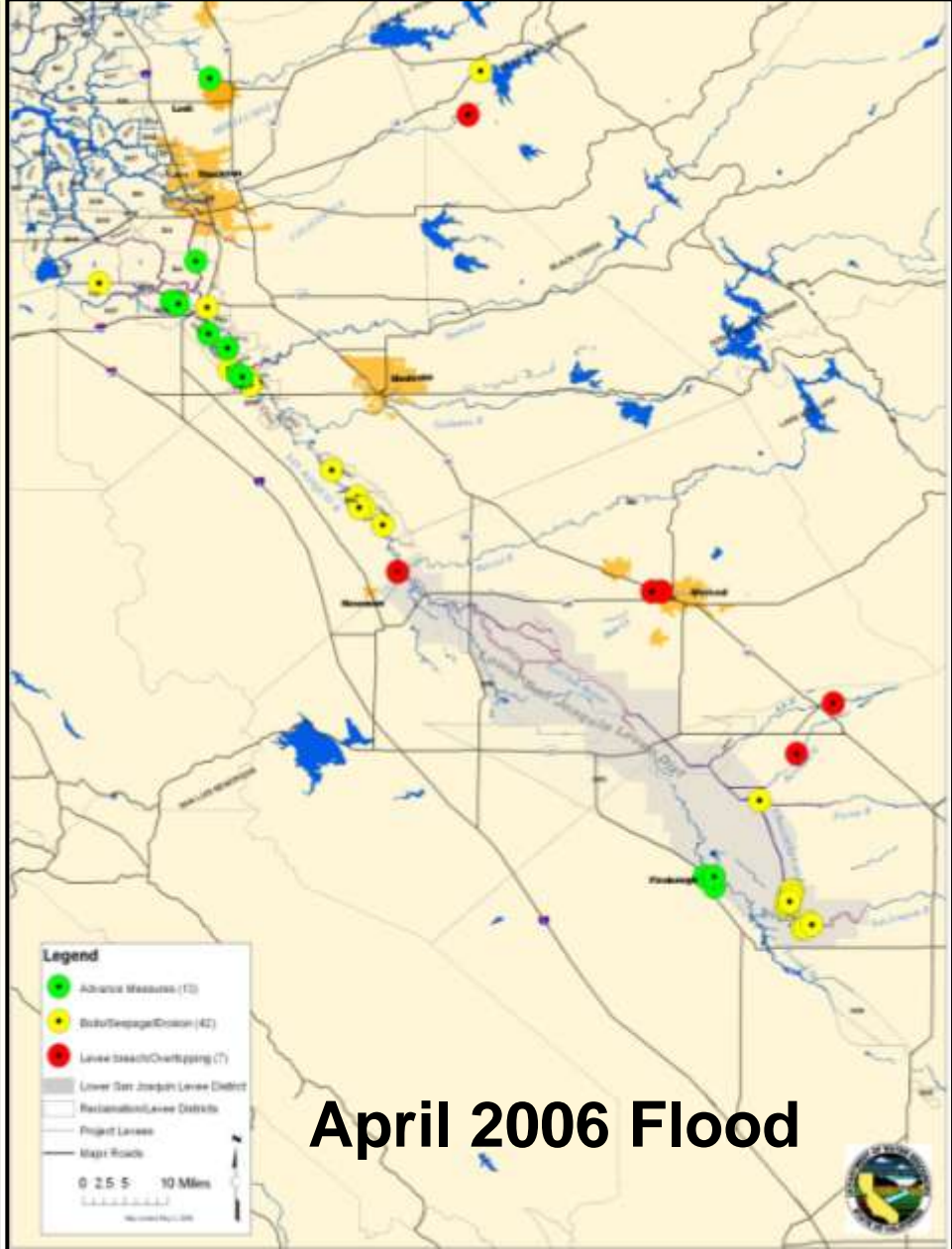


April 2006 Flood

Legend

- Advance Warning (12)
- Bolt/Seepage/Creep (42)
- Levee Breach/Overtopping (7)
- ▭ Lower San Joaquin Levee District
- ▭ Reclamation/Levee Districts
- ▭ Project Levees
- Major Roads

0 2.5 5 10 Miles



Propositions 1E and 84 Distribution (\$4.89 B)



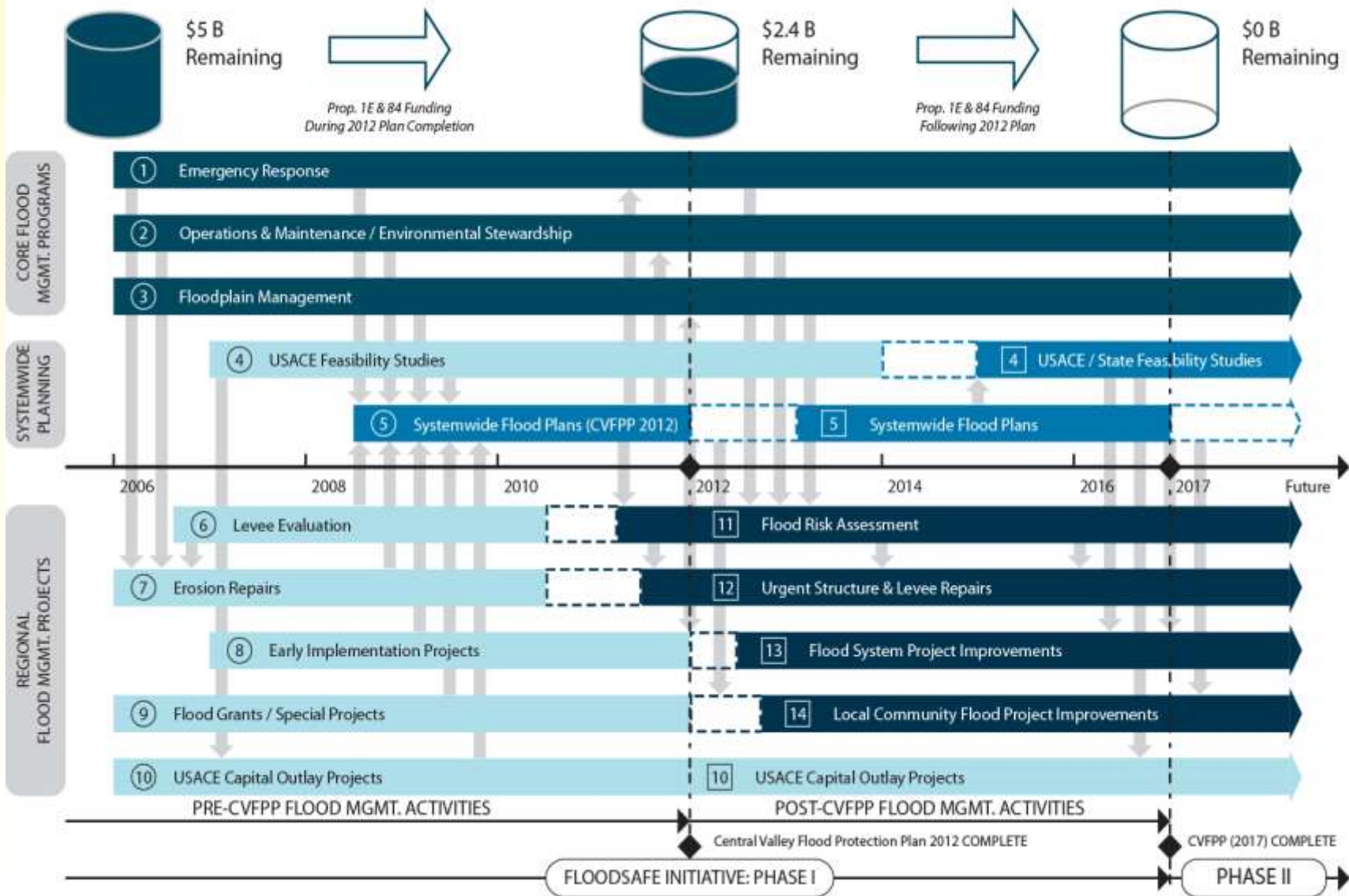
2007 Flood Legislation Overview

Legislation	Major DWR Flood Initiative	Date	Status
SB 5	• Develop preliminary 100-yr & 200-yr floodplain maps for C.V.	Jul. 2008	✓
	• Propose building code for SPFC areas subject to 200-yr flood.	Jan. 2009	✓
	• Develop a Central Valley Flood Protection Plan (CVFPP) for adoption by the Central Valley Flood Protection Board (CVFPB).	Jan. 2012 Jul. 2012	
	• Urban Level of Flood Protection (1-in-200 chance of flooding) for Central Valley will apply to future development in urban areas.	2015	
SB17, SB5	• Document State Plan of Flood Control (SPFC).	Dec. 2010	✓
AB 5	• Develop new local cost share formulas for repairs / improvements.	Jan. 2010	✓
AB 70	• Cities & counties share costs associated with potential flood damages in previously undeveloped areas protected by SPFC.		
AB 156	• Send annual flood risk notifications to property owners protected by levees.	Sep. 2010	✓
	• Prepare Flood Control System Status Report schedule.	Dec. 2008	✓
AB162, SB5, AB156	• Cities & counties amend their general plans.	2012-14	

Recommendations from the 2012 Central Valley Flood Protection Plan (CVFPP) will change the character of pre-2012 FloodSAFE activities.

FloodSAFE Accomplishments Timeline

Base / Core activities will take info. from post-2012 activities & interact w/ future plans.



INITIAL RISK

Structural Improvements

- Critical levee repairs
- State-local early implementation projects
- Federal projects
- Emergency supplies and stockpiles
- Improved flood system operation and maintenance
- Delta levee improvements

Non-Structural Improvements

- Levee evaluations
- Central Valley Flood Protection Plan
- Mitigation banking
- Flood corridor easements
- Designated floodways
- Floodplain mapping
- New building standards
- Local agency risk acknowledgement
- Shared liability between State and local agencies
- System reoperation
- General Plan amendments and zoning ordinances

Flood Management Program Cycle

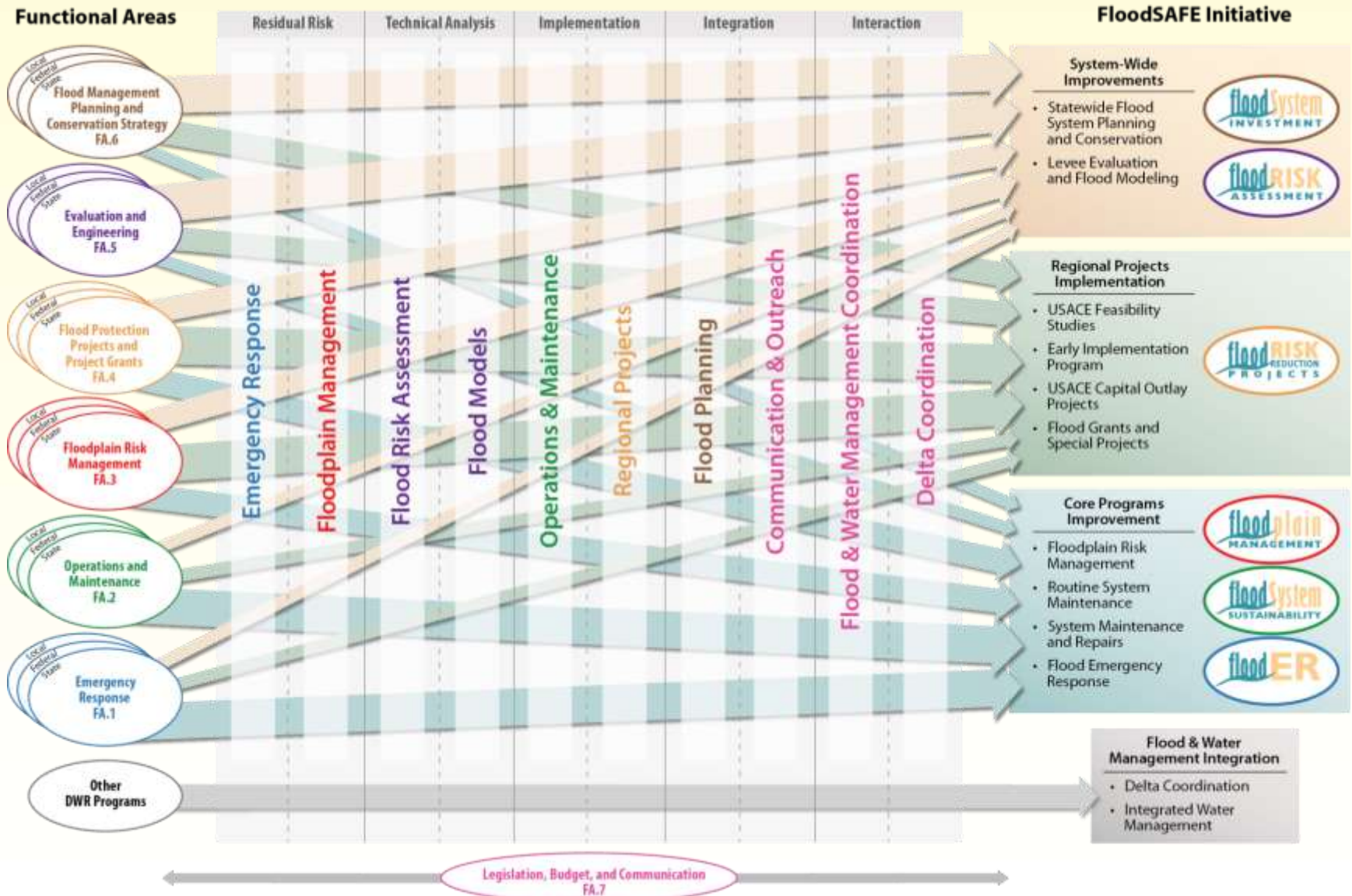


Time / Resources

Ongoing Projects

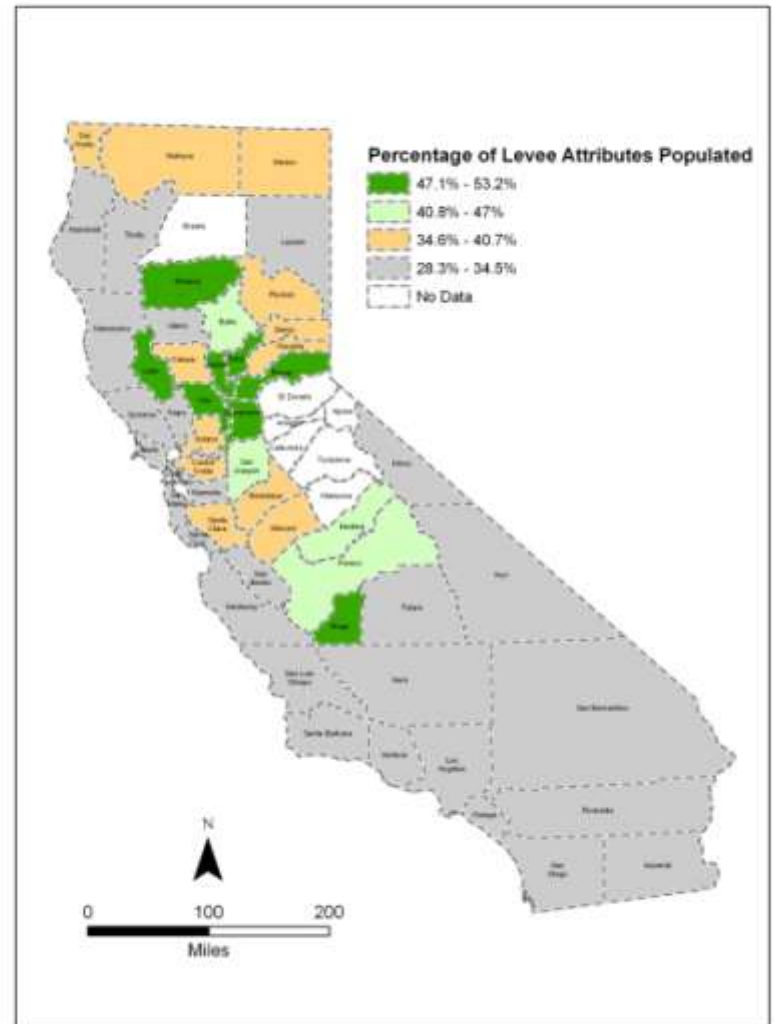
New Projects

Functional Area Cross-Coordination Teams

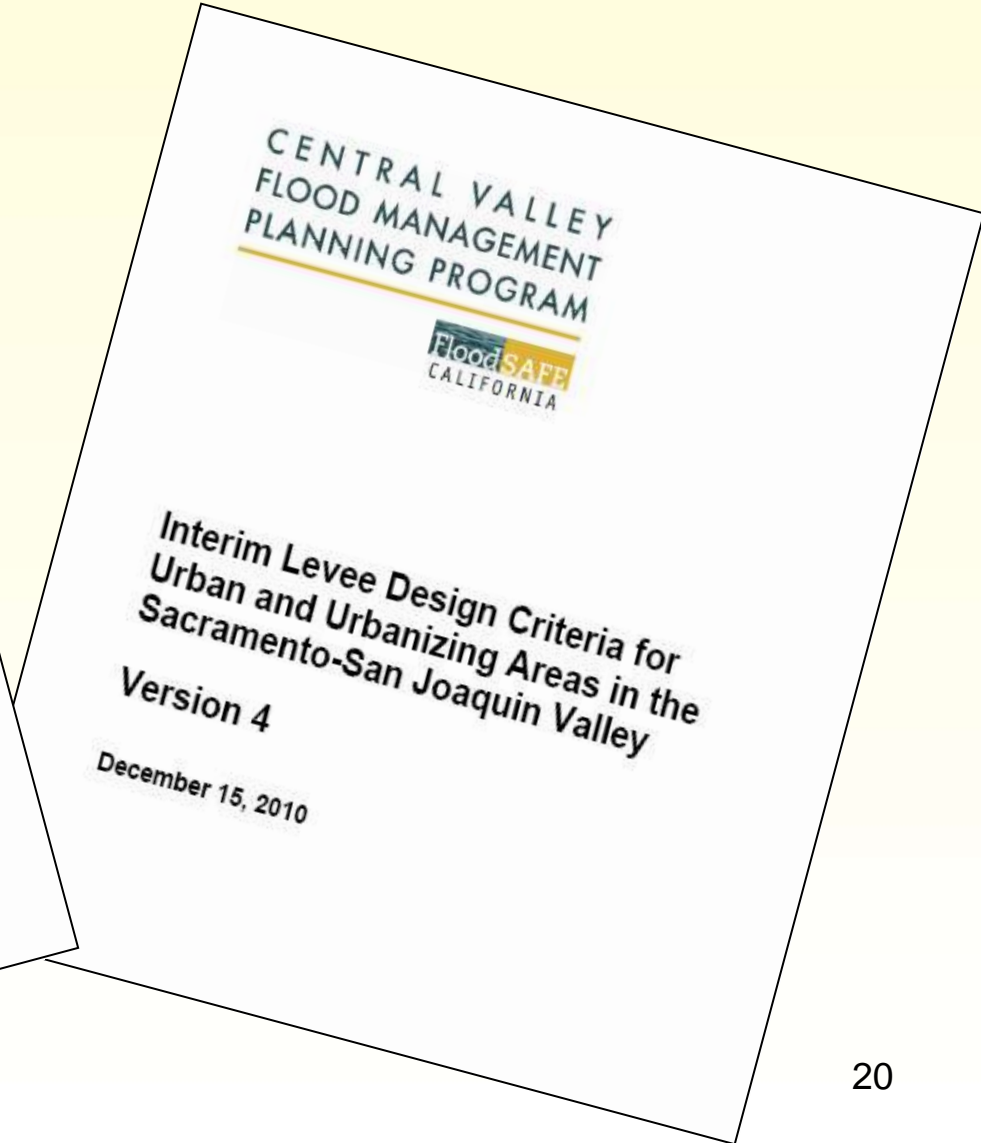
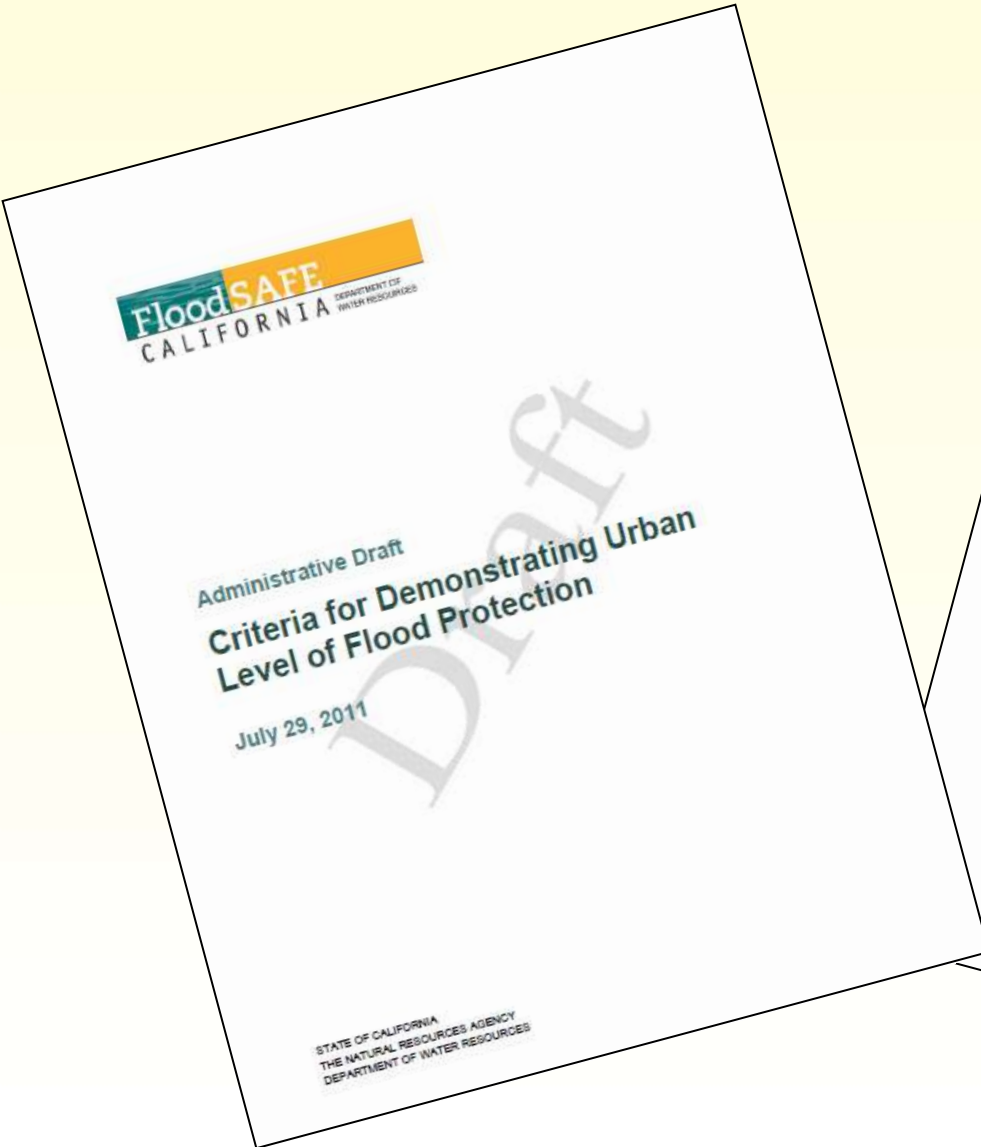


Levee Database

CALIFORNIA LEVEE DATABASE



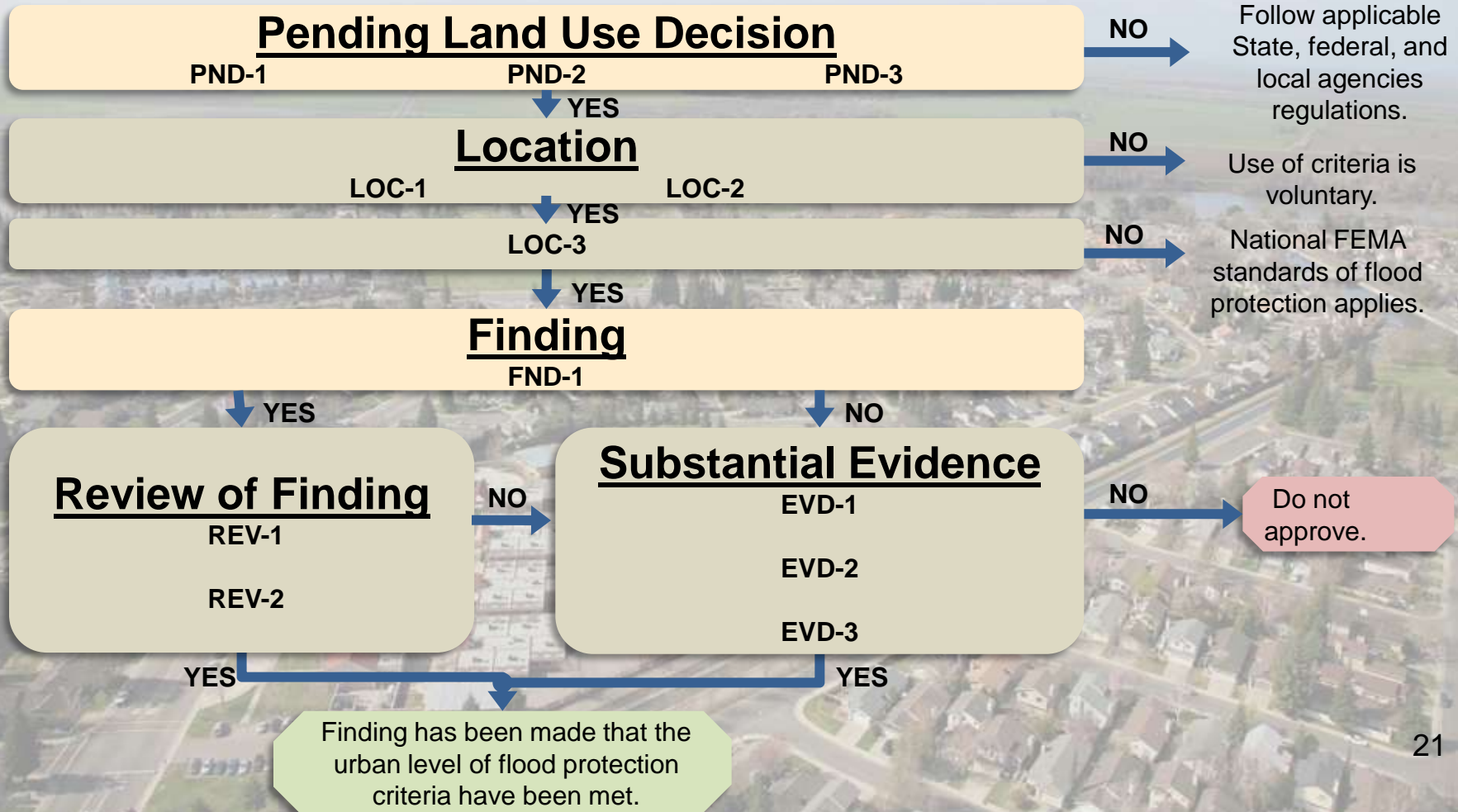
Criteria for Urban Level of Flood Protection



Draft ULOP Document Overview

Detailed Sequential and Conditional Criteria

Guidance for cities and counties making land use decisions



Urban Levee Design Criteria

Interim Levee Design Criteria, Version 4, 12/15/10

6.0 Interim Levee Design Criteria for Urban and Urbanizing Areas

- Design Water Surface Elevation Criteria (Modified FEMA or Modified Corps approaches)
- Landside Slope Stability Criteria for Intermittently-Loaded Levees
- Underseepage Criteria for Intermittently-Loaded Levees
- Frequently-Loaded Levee Design Criteria
- Seismic Vulnerability Criteria
- Levee Geometry Criteria
- Erosion Criteria
- Right-of-Way Criteria
- Levee Design Criteria Summary

Urban Levee Design Criteria

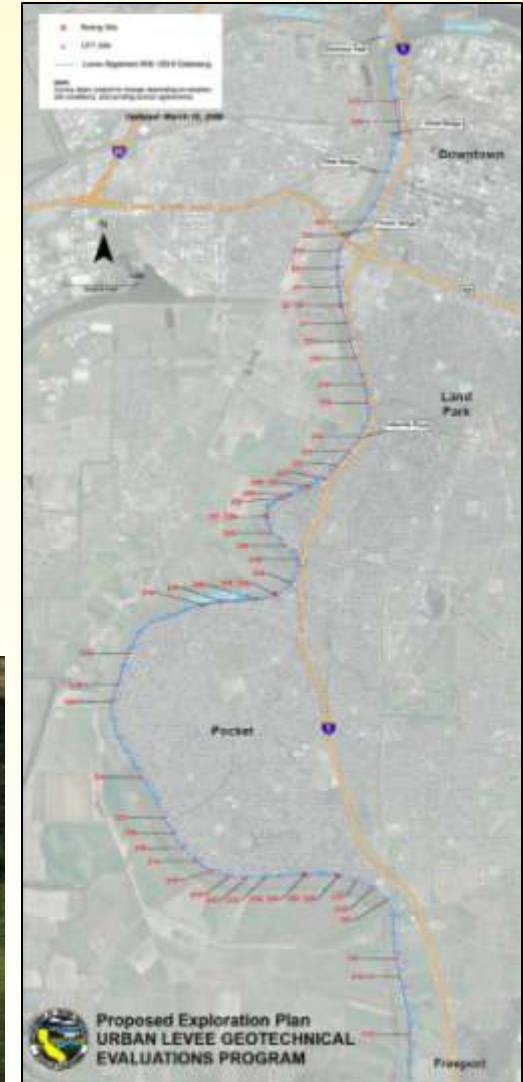
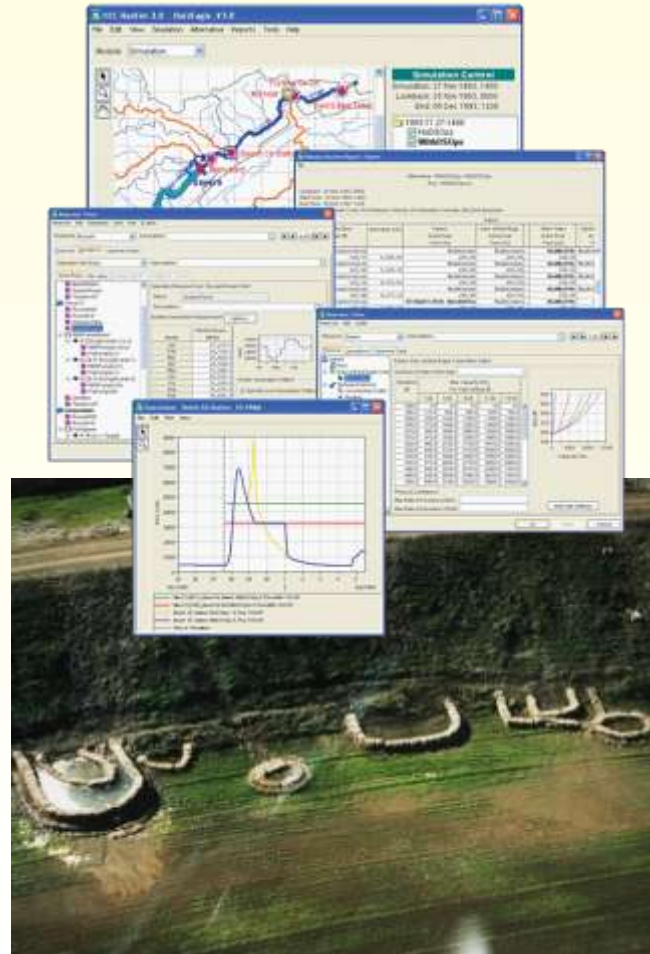
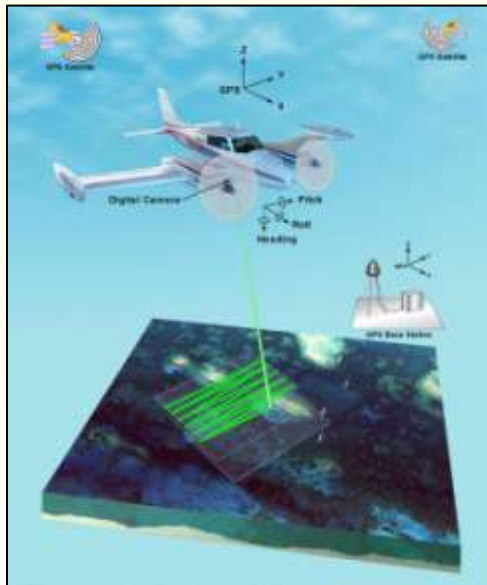
Interim Levee Design Criteria, Version 4, 12/15/10

7.0 Other Criteria under Development

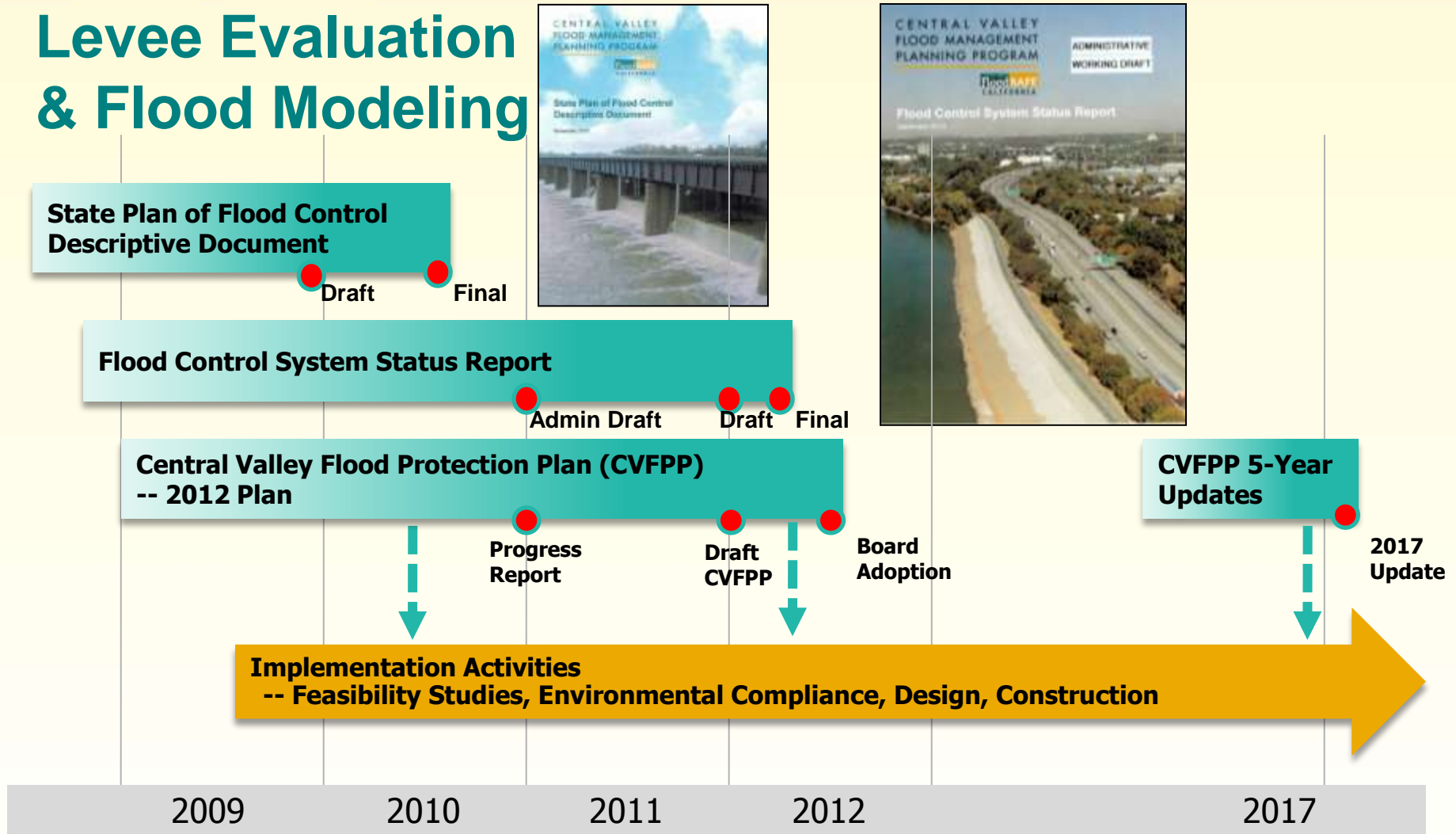
- Encroachments
(Excluding Penetrations,
Closure Structures, and
Levee Vegetation)
- Penetrations
- Floodwalls, Retaining
Walls, and Closure
Structures
- Levee Vegetation
- Wind Setup and Wave
Runup
- Security
- Sea Level Rise
- Emergency Actions
- Procedure for Finding that
Facilities Provide the
Urban Level of Flood
Protection
- Substantial Evidence in
the Record
- Exceptions
- Periodic Review
- Independent Expert Panel

Levee Evaluation and Flood Modeling

- Data Acquisition
- Levee Evaluation
- Modeling



Levee Evaluation & Flood Modeling



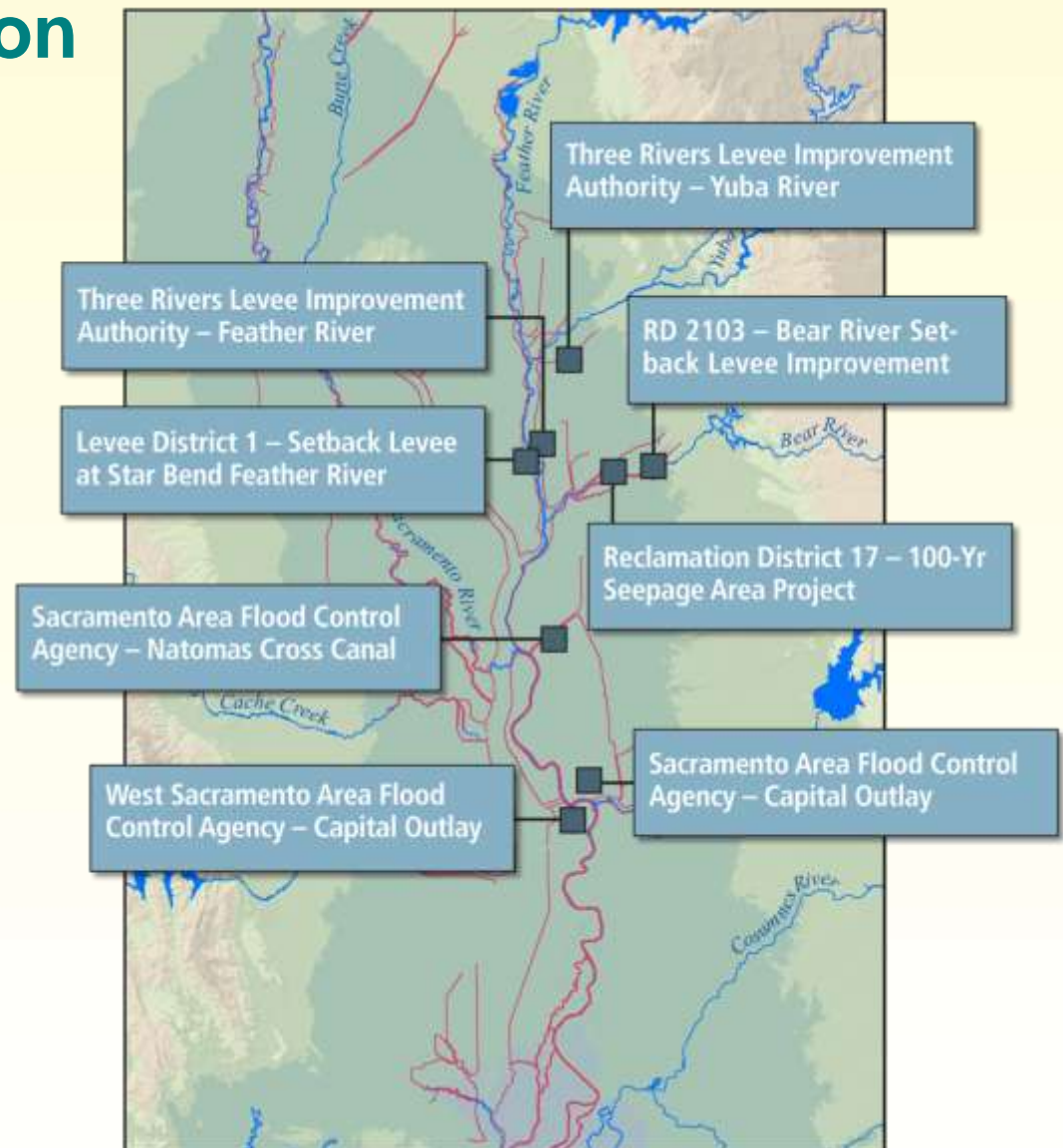
Key: ● Milestone Document

Early Implementation Program

High priority projects need to be implemented now, in advance of completion and adoption of the Central Valley Flood Protection Plan (the Plan) required by State legislation for completion and adoption in 2012.

EIPs modify federal projects:

- Section 408 approval required
- Credit required (if federal study or project underway)



Early Implementation Program

Early Implementation Program Guidelines

AUTHORIZED UNDER
THE DISASTER PREPAREDNESS AND FLOOD PREVENTION BOND ACT OF 2006
(PROPOSITION 1E)
AND
THE SAFE DRINKING WATER, WATER QUALITY AND SUPPLY, FLOOD CONTROL
AND COASTAL PROTECTION BOND ACT OF 2006 (PROPOSITION 84)

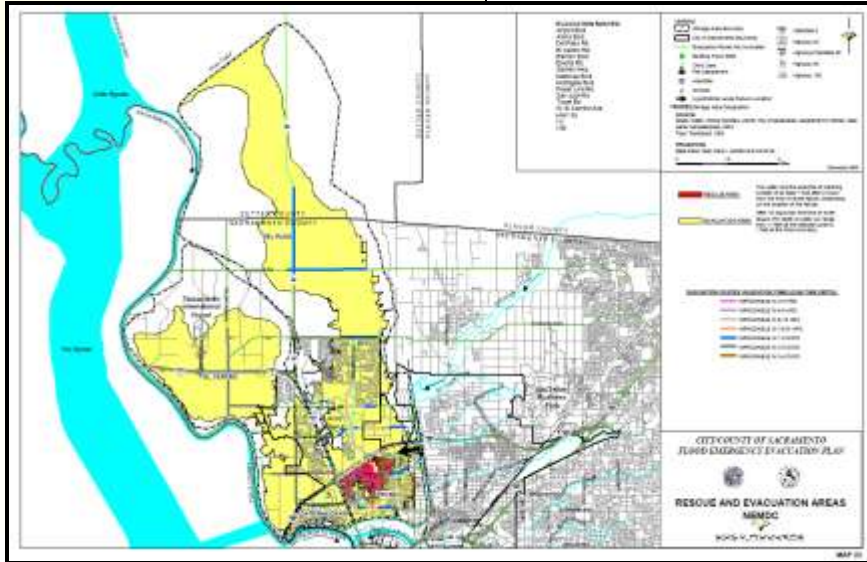


Setback Levee at Star Bend
Feather River



Construction
progress during the
Feather River
Setback Levee

Emergency Planning Assistance



DRAFT
Flood Emergency Response
Projects Direct Grant
Solicitation Package for
*Local Flood Emergency
Planning, Preparedness,
and Response*

January 2011



Floodplain Risk Communication

FEMA's floodplain mapping includes:

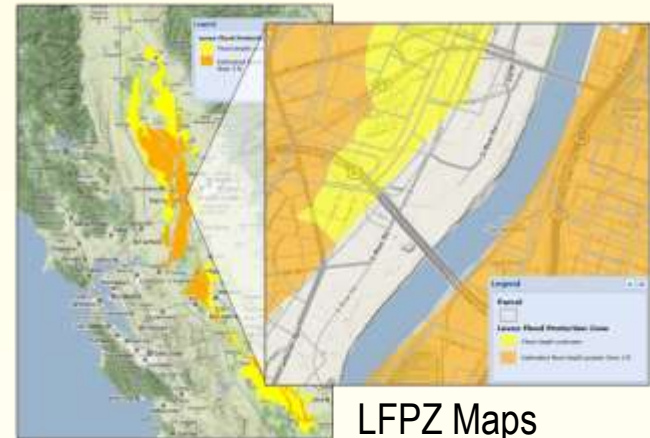
- Flood Insurance Rate Maps (FIRM)
- Digital Flood Insurance Rate Maps (DFIRM)

DWR's floodplain mapping includes:

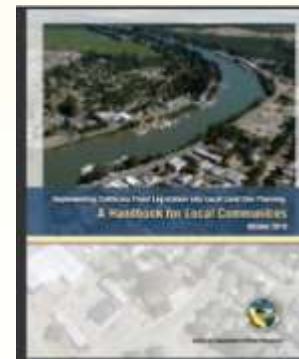
- Awareness Floodplain Maps
- Best Available Mapping (BAM)
- Levee Flood Protection Zones (LFPZ) Maps
- Central Valley Floodplain Evaluation and Delineation (CVFED) Maps
- Alluvial Fan Floodplain Evaluation and Delineation (AFFED) Maps



Risk Notification
- 277,000 notices
- 359,000 parcels



LFPZ Maps



Handbook for Local Communities

Nonstructural Programs

- Forecast-Based Coordinated Reservoir Operation Grants
- Flood Corridor Grants
- Building Code Amendments



DRAFT
Flood Emergency Response
Direct Grant Solicitation
Package for
*Forecast Coordinated
Operation of the Reservoirs*

January 2011

Thank You!

