

# California Statewide Flood Planning and Regional Sustainability Teaser

CEAC Flood Control & Water Resources Policy Committee  
Aug. 17, 2016

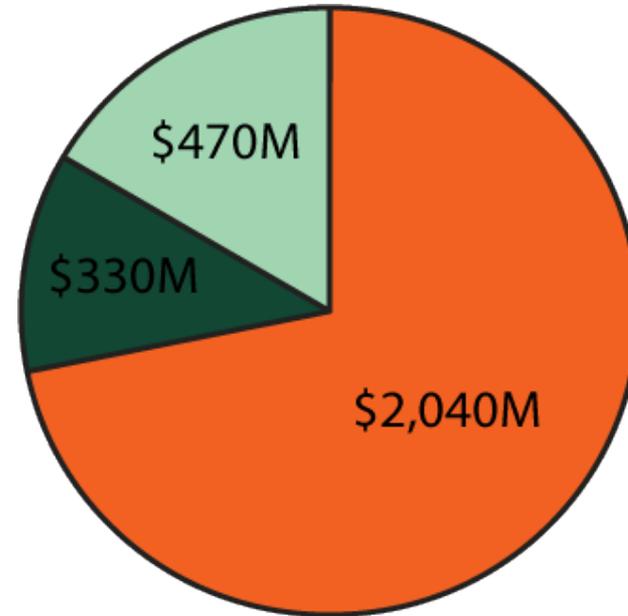
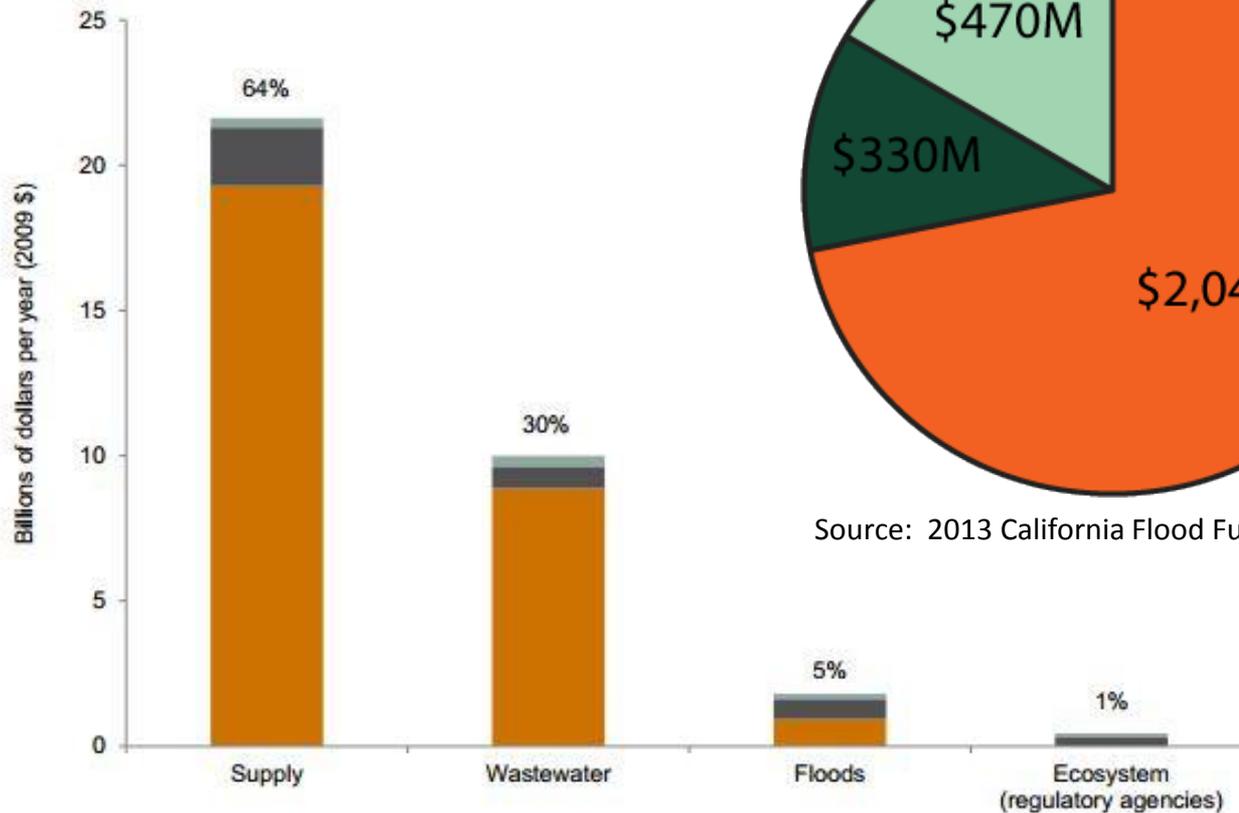
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# Financing CA's Water Management Activities

Average Annual Expenditures in Flood Management, 2000 - 2010

Water sector spending by function, late 2000s



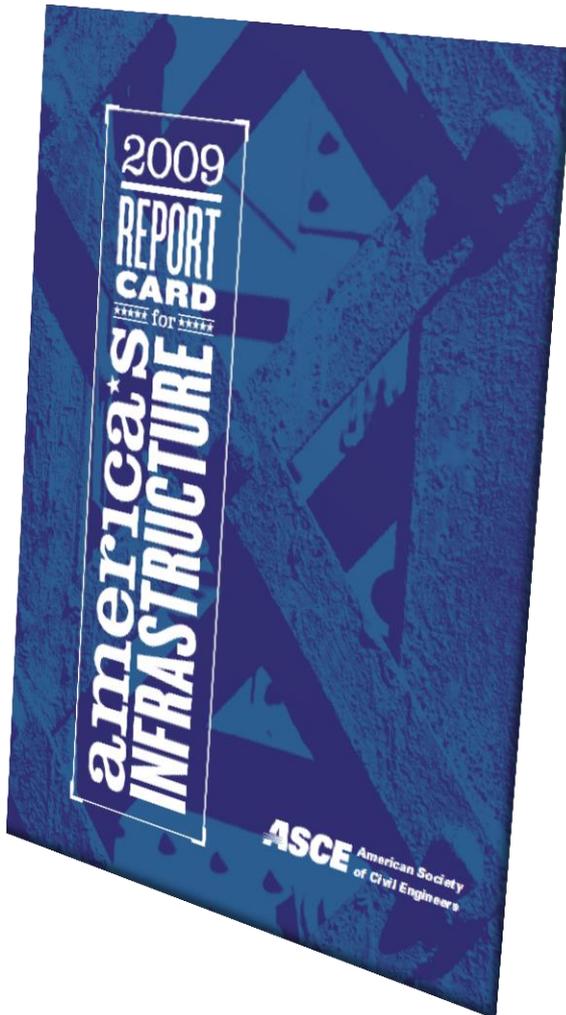
- Federal
- State
- Local

Source: 2013 California Flood Future, Attachment I: Finance Strategies (CDWR)



# Our Strategic Approach Flood Management Needs Improvement

ASCE's 2009  
America's Infrastructure Report Card



WATER AND ENVIRONMENT  
LEVEES

2009  
GRADE

**D-**

## RAISING THE GRADES SOLUTIONS

THAT WILL WORK NOW

A = Exceptional  
B = Good  
C = Mediocre  
D = Poor  
F = Failing

AMERICA'S INFRASTRUCTURE G.P.A. **D**

### ESTIMATED 6-YEAR FUNDING REQUIREMENTS FOR LEVEES

Total investment needs  
**\$50 BILLION**

Estimated spending  
**\$1.18 BILLION**

Projected shortfall  
**\$48.82 BILLION**

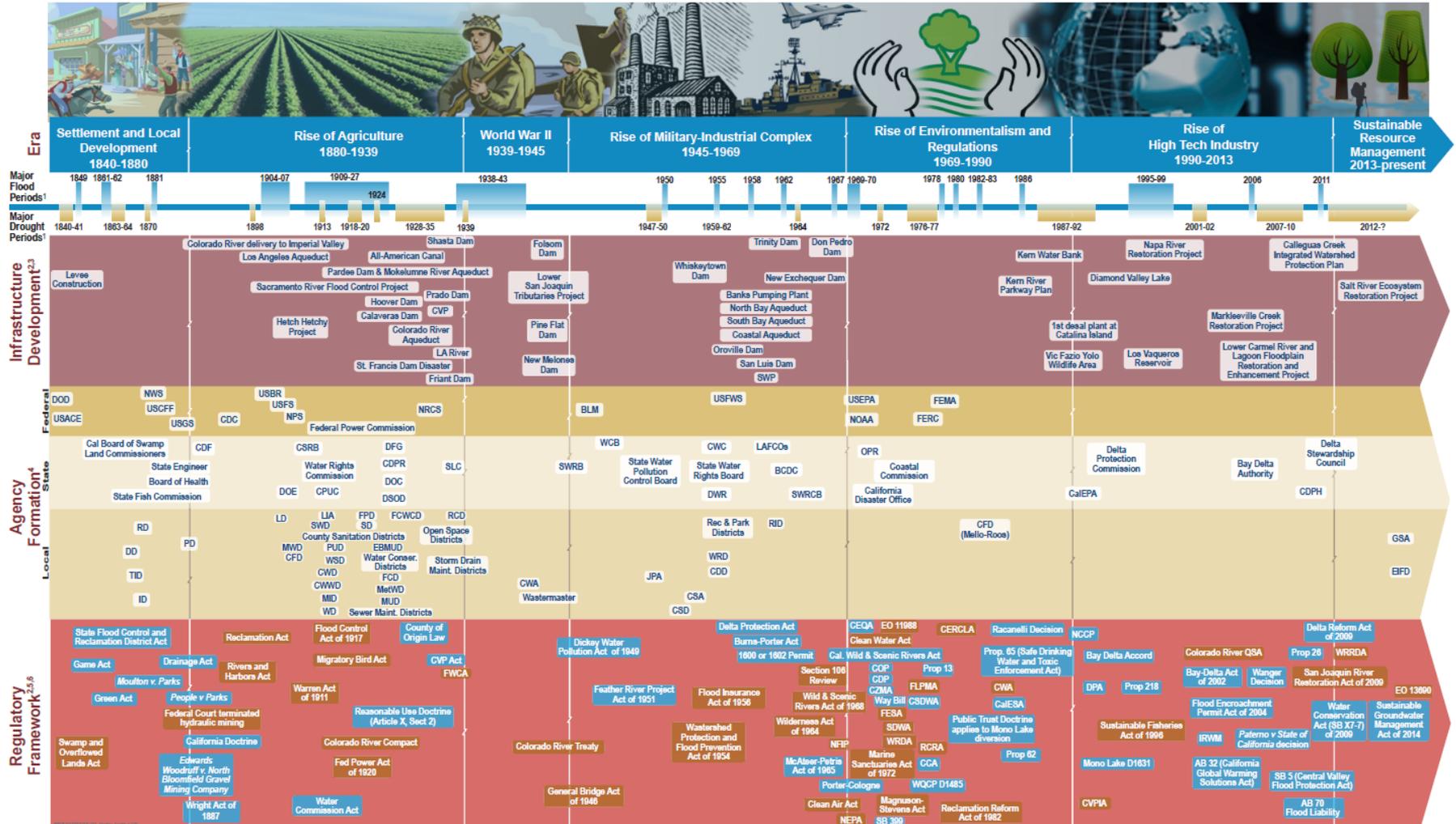


- ★ **ADOPT** the following recommendations from the 2009 National Committee on Levee Safety:
  - ESTABLISH** a National Levee Safety Commission;
  - COMPLETE** the National Levee Inventory for both federal and nonfederal levees. The inventory must be regularly updated and maintained;
  - ADOPT** a hazard potential classification system;
  - CREATE** a strong education and outreach program to inform local leaders and residents about the level of protection they can expect from a nearby levee;<sup>2</sup>
- ★ **PHASE** in mandatory purchase of flood insurance with risk-based premiums for structures in areas protected by levees;
- ★ **INCREASE** funding at all levels of government to address structural and nonstructural solutions that reduce risk to people and property. Additionally, investments should be targeted to address life-cycle costs and research;
- ★ **REQUIRE** the development and exercising of emergency action plans for levee-protected areas;
- ★ **ENSURE** that operation and maintenance plans cover all elements of the system, recognizing that levees are part of complex systems that also include pumps, interior drainage systems, closures, penetrations, and transitions;
- ★ **ASSESS** levees using updated hydrology and hydraulic analyses that incorporate the impact of urbanization and climate change, particularly for coastal levees.



# California Water Management is Complex

## SELECTED TIMELINE OF CALIFORNIA WATER DEVELOPMENT



<sup>1</sup>Major flood and drought periods were established by looking at historical references as listed in the California's Flood Future Report.

<sup>2</sup>See Appendix C for additional information about Infrastructure Development and Regulatory Framework elements.

<sup>3</sup>Dates indicate date project was approved.

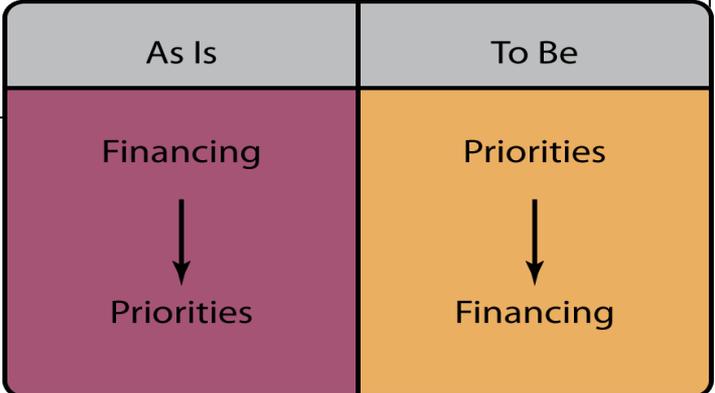
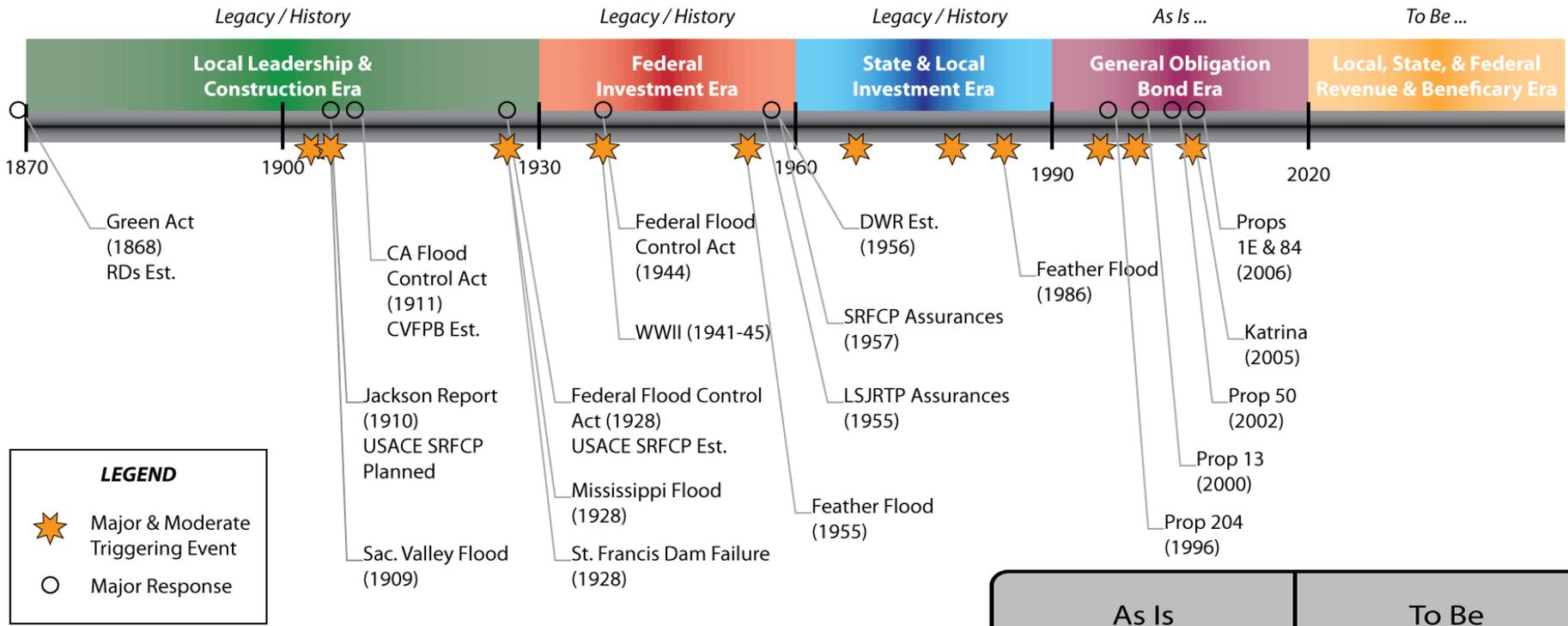
<sup>4</sup>See back of timeline for key to Agency Formation abbreviations.

<sup>5</sup>Regulatory Framework entries are shaded by their level of governance. Brown indicates Federal governance. Blue indicates State governance.

<sup>6</sup>Dates indicate the original approval date of the legislation. See Appendix C for information about subsequent legislation approval.

# Governance is Slow to Change

## Timeline of Flood Financing in California



# California Water Policy Trends

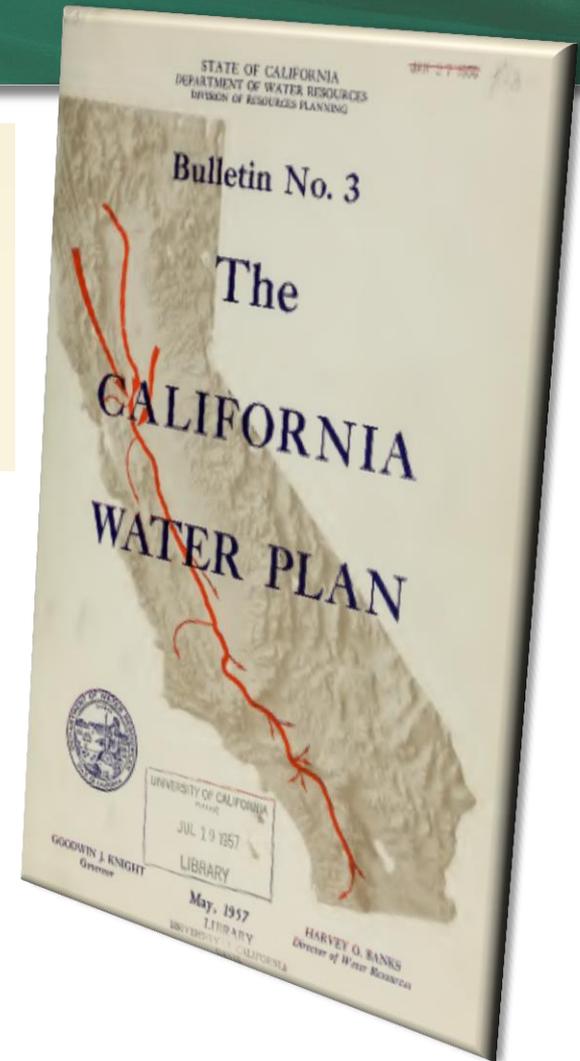
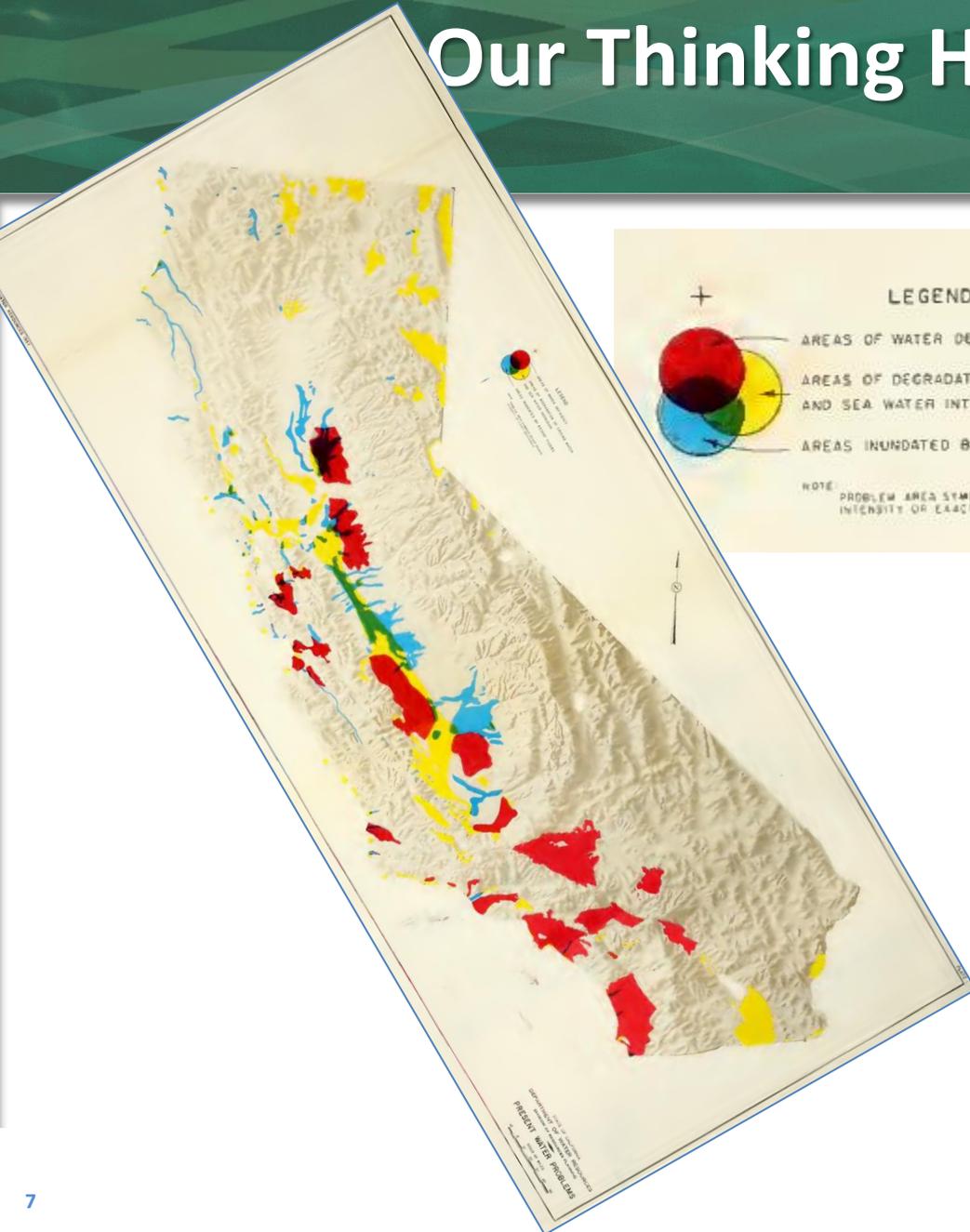
Water  
Development

Resource  
Awareness &  
Conflict

Sustainable  
Resources  
Management



# Our Thinking Has Evolved



# Roles & Types of Plans

## Plan Recipe

- Provide Context & Set Objectives
  - Describe Performance of Several Ideas
- Estimate Cost (Time & \$\$\$) of Recommendation
  - Show a Path to Implementation for Recommendation

## Types of Plans

- Policy Recommendations
  - ✓ Governance (Roles & Responsibilities)
  - ✓ Regulatory
- Strategic (Leadership)
  - ✓ Resource Prioritization (Budget & Staff)
  - ✓ System Investment
- Tactical (Directing Action)
  - ✓ Project Investment
  - ✓ Engagement
- Technical
  - ✓ Meeting Facilitation

# Levels of Study

Implementation of action must move through increasingly more detailed levels of action

- Conceptual
- Appraisal
- Feasibility
- Site-Specific
- Design
- Plans & Specifications

## Summary of Levels of Study

**Concept-Level** studies present preliminary information for review to promote discussion of a proposed project. They generally focus on a single project concept and do not include alternatives analysis or reach any conclusions about the ultimate feasibility or acceptability of a project. The purpose of concept-level studies is to inform participating agencies, stakeholders, and the public about the nature of potential benefits, types of facilities required, and issues that should be addressed in more detailed studies. *All existing Hetch Hetchy studies are at this level, at best.*

**Appraisal-Level** studies build on the conceptual-level studies and include a preliminary assessment of alternatives, and identification of sensitive environmental resources and legal and institutional constraints. The analyses conducted in appraisal studies are generally based upon the minimum information needed to determine if there are workable solutions or fatal flaws.

**Feasibility-Level** studies include additional data collection and analyses required to develop a full and reasonable range of alternatives. Feasibility studies provide enough information for decisionmakers to understand what potential risks are involved, and who are potential beneficiaries. The feasibility study process includes items such as: identification of present and future conditions; identification of problems and needs; evaluation of resource capabilities; formulation of alternative plans; analysis and comparison of alternatives and costs; and plan selection. An iterative process is used to arrive at a preferred plan that reasonably maximizes net benefits with acceptable environmental impacts. Feasibility studies are usually integrated with compliance under California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and other related environmental and cultural resources laws. Environmental documentation may be conducted at a programmatic-level or site-specific level.

**Site-Specific** studies are conducted to quantify resources at a defined geographical location. These studies typically consist of field investigations to identify features such as geological and hydrological conditions and cultural, archeological, or biological resources. Many of the site-specific studies are conducted during the feasibility study phase or as part of the NEPA/CEQA/environmental documentation and permit acquisition processes. Often, study protocols are established to assure that investigations are conducted to meet the requirements of a regulatory agency.

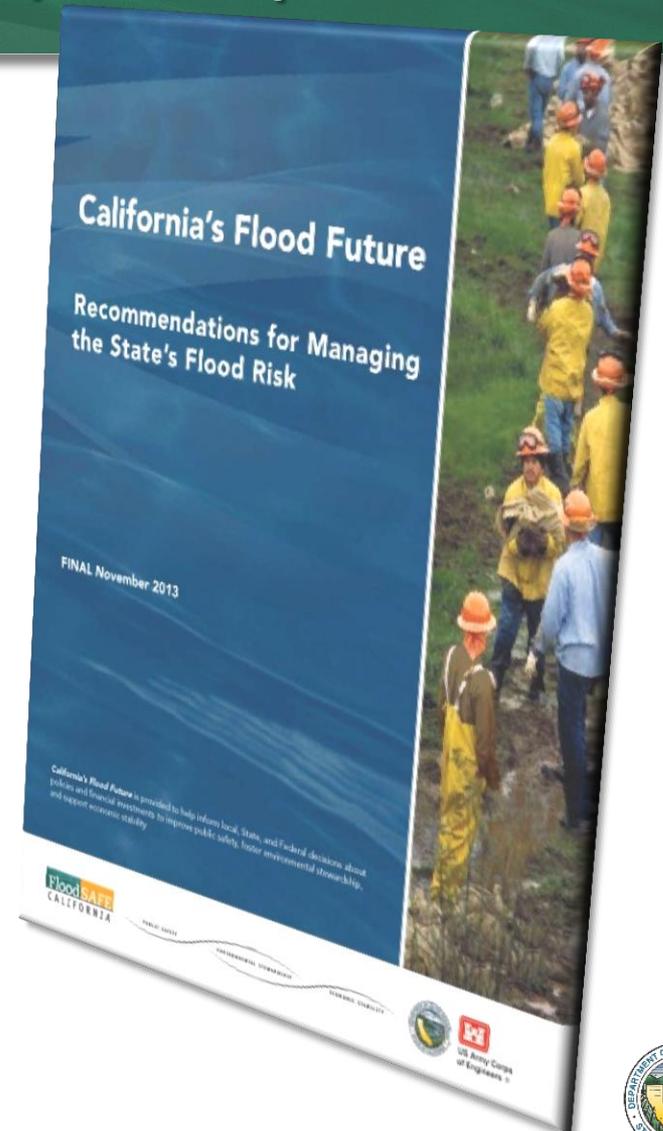
**Design-Level** studies or documents build on feasibility-level designs based on new or revised plans and information such as updated design practices and cost trends. Design-level studies also include more detailed cost estimates and detailed field investigations, such as subsurface soil explorations and topographic surveys.

**Plans and Specifications** are the detailed instructions to contractors on how to build the project.



# California's Flood Future: Plan to Inform Policy Discussions / Conceptual Detail

1. Statewide Focus – estimated exposure and level of investment needed to address current flood risk
2. Created map books to show flood risk exposure for every county
3. Catalogued history of flooding for reference by local and regional planning agencies and land use officials
4. Articulated 7 high level / policy recommendations
5. Established key flood management vocabulary / terminology



# Directive to Focus on Integrated Resources Management

## 2014 California Water Action Plan Objective

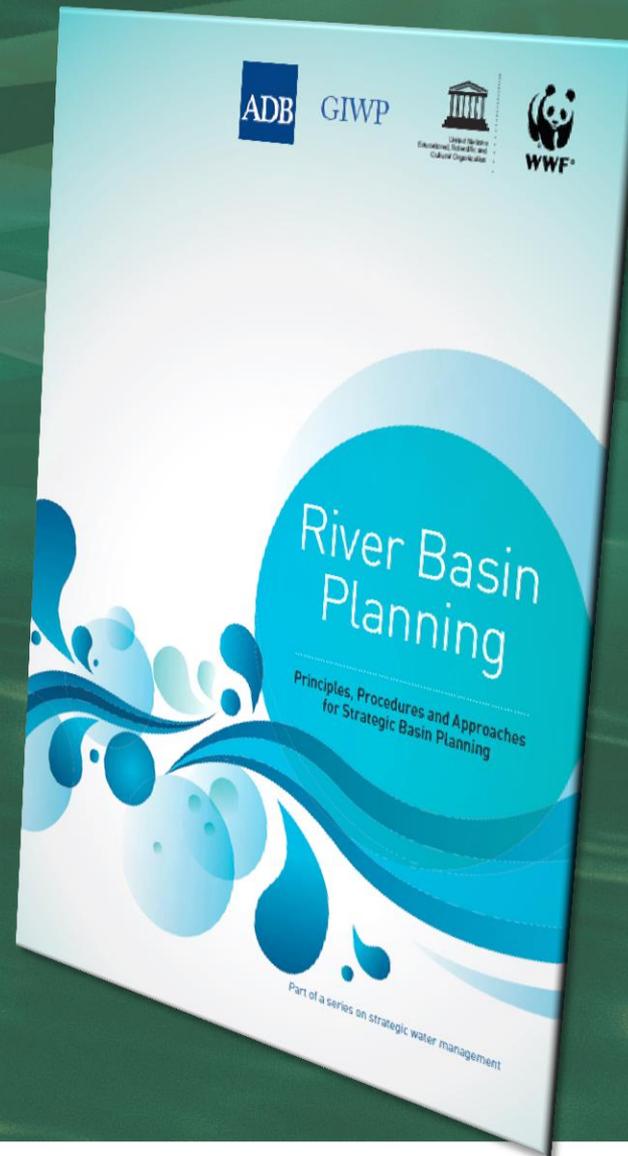
- I. Conservation as a California Way of Life
- II. Increase Local & Regional Self-Reliance
- III. Achieve Co-Equal Goals for the Delta
- IV. Protect & Restore Important Ecosystems
- V. Manage & Prepare for Dry Periods
- VI. Expand Water Storage Capacity
- VII. Provide Safe Drinking Water for all Communities
- VIII. Improve Flood Protection
- IX. Increase Operational & Regulatory Efficiency
- X. Identify Sustainable & Integrated Financing Opportunities



# There is a Host of Water Policy Drivers



# River Basin Planning



# River Basin Planning **10 Golden Rules**

1. Develop a comprehensive understanding of the entire system
2. Plan and act, even without full knowledge
3. Prioritize for current attention, and adopt a phased and iterative approach to achieve long-term goals
4. Recognize that basin-planning is iterative and often chaotic
5. Enable adaptation to changing circumstances



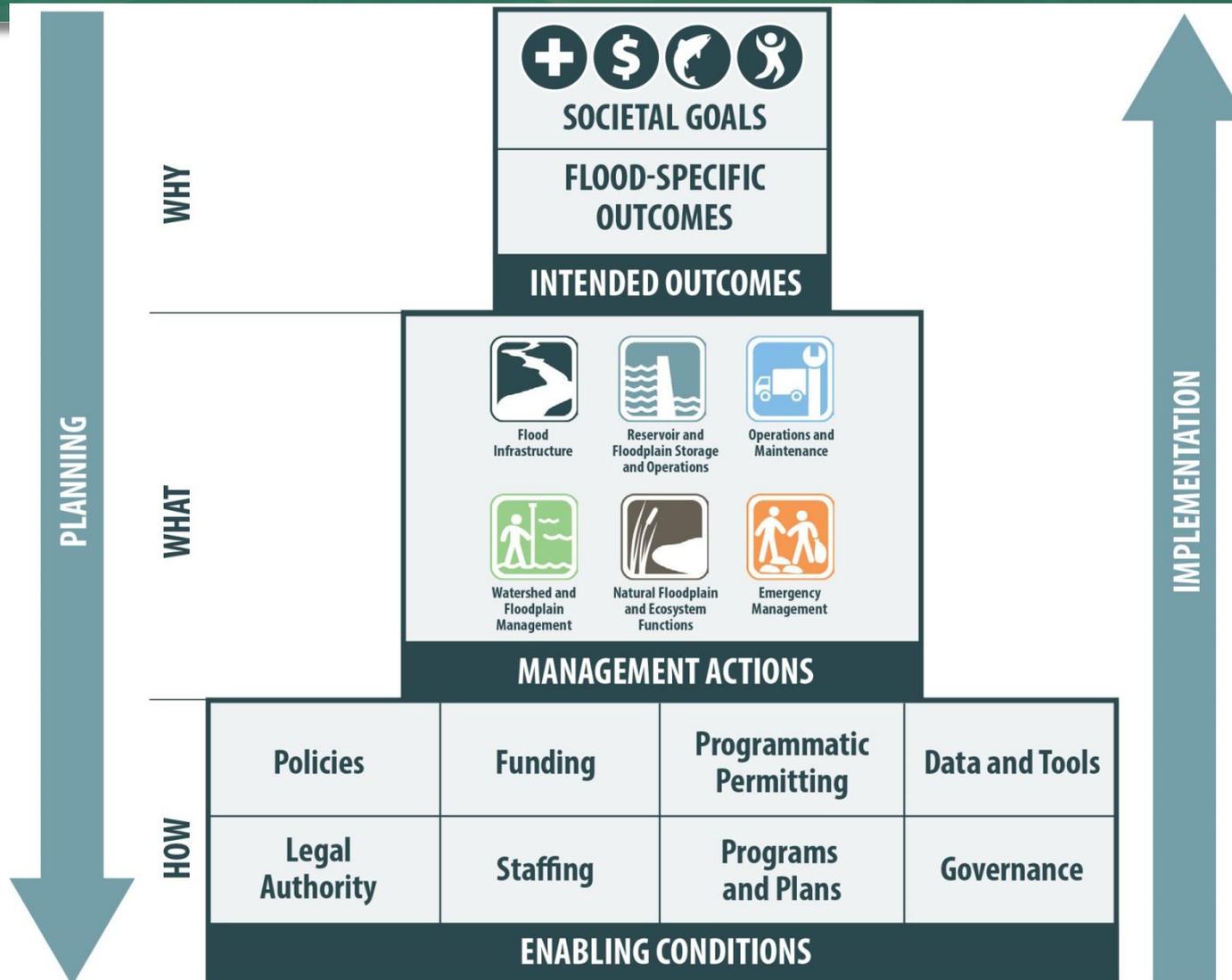
# River Basin Planning **10 Golden Rules**



6. Develop relevant and consistent thematic plans
7. Address issues at the appropriate scale by nesting local plans under the basin plan
8. Engage stakeholders with a view to strengthening institutional relationships
9. Focus on implementation of the basin plan throughout
10. Select the planning approach and methods to suit the basin needs



# Effective Use of Planning for Implementation



# Key DWR Flood Management Planning / Floodplain Management Activities

- Managing State Plan of Flood Control Risks
  - 2017 Update to the Central Valley Flood Protection Plan
  - Annual Flood Risk Notification
- Legislative Advocacy & Policy Development
  - Statewide Flood Management Plan / *Investing in CA's Flood Future*
  - Federal & Legislative Advocacy and Planning
  - Silver Jackets (Local / State / Federal Communication & Coordination)
- National Flood Insurance Program
  - Community Assistance Program
    - Community Assistance Visits
    - Coastal Vulnerability Assessments
    - Rural Floodplain Management Working Group
- Federal / State / Local Project Development
  - Technical Review of CA-based USACE Investigations (aka Feasibility Studies)
  - Sponsorship of State Plan of Flood Control USACE Investigations

NOTE: All of these activities roll up into the CA Water Plan Update and support the CA Water Action Plan(s).



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