California's Flood Future

Recommendations for
Managing the State's Flood Risk

Briefing for South Coast Counties

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Agenda

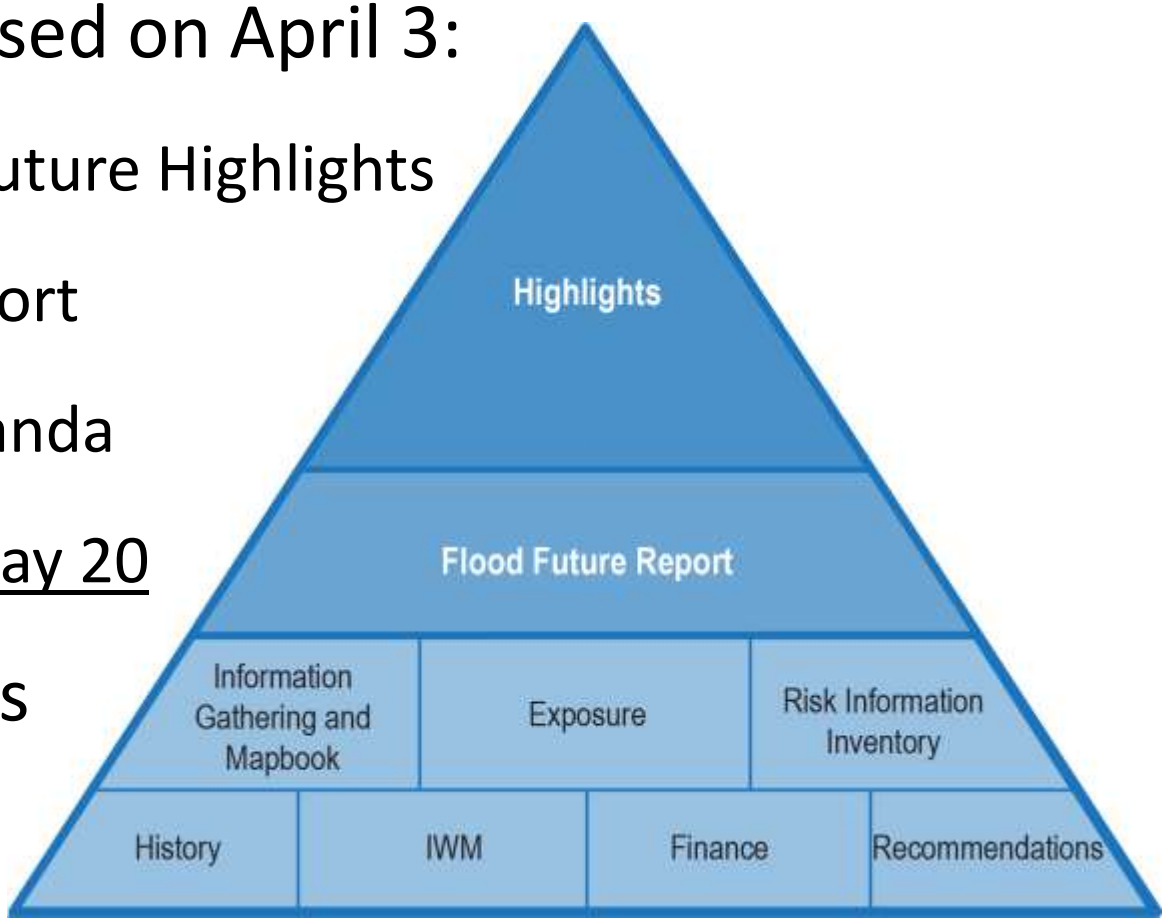
- Introductions
- *California's Flood Future* Presentation
- Break
- Recommendations Discussion
- Questions & Answers
- Closing Remarks

Report Purpose

- Increase understanding of statewide flood problem
- Make recommendations for managing flood risk
- Inform decisions about:
  - Policies
  - Financial investments

California's Flood Future: Release Schedule

- Public Drafts Released on April 3:
  - California Flood Future Highlights
  - Flood Future Report
  - Technical memoranda
  - Comments due <u>May 20</u>
- 9 regional meetings statewide



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DWR Flood Planning

- Central Valley
  - CVFPP
- Statewide
  - Flood Future Report
  - California Water Plan

USACE

South Pacific Division

Flood Plain Management Services Authority Program

- Compile/share flood hazard information
- Provide technical and planning advice

USACE Participation does not include:

- Advocating for taxpayer funding
- Advocating for additional USACE authority

Consistent with USACE Civil Works Strategic Plan 2011-2015

Flood Future Report Process

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California is at risk for catastrophic flooding!

- Devastating impacts to California and the nation
- 1 in 5 Californians are exposed to flooding
- $580B in assets are exposed to flooding
- Every county has experienced a Federally declared flood disaster in the last 20 years

The Problem

California experiences many types of flooding

Flood risk is defined using these factors:

Hazard

What causes harm?

Performance

How will the system react?

Exposure

Who and what can be harmed?

Vulnerability

How susceptible to harm?

Consequence

How much harm?

Inundation Risk

Likelihood and severity of adverse consequences

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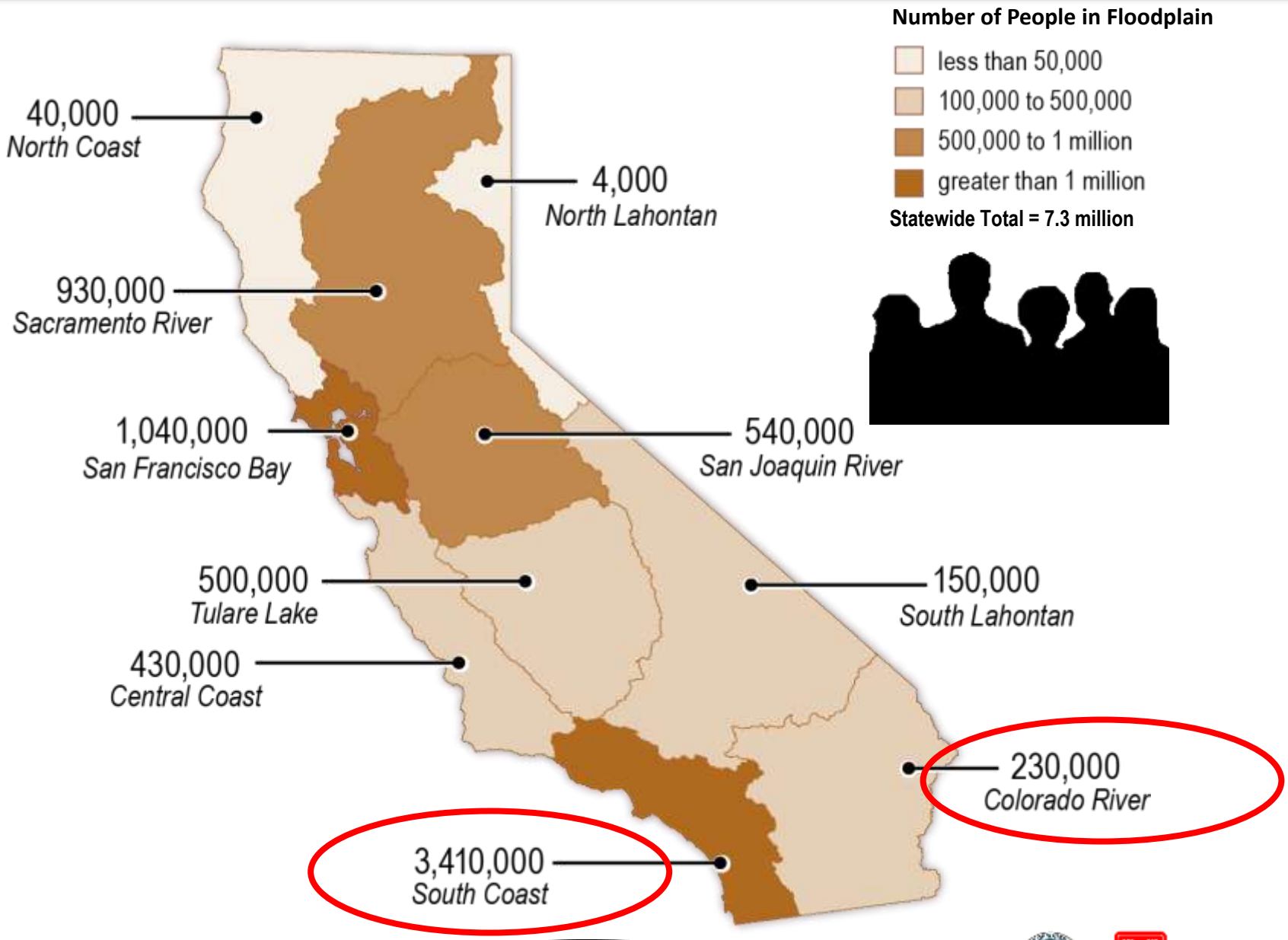
7.3 million Californians live in floodplains



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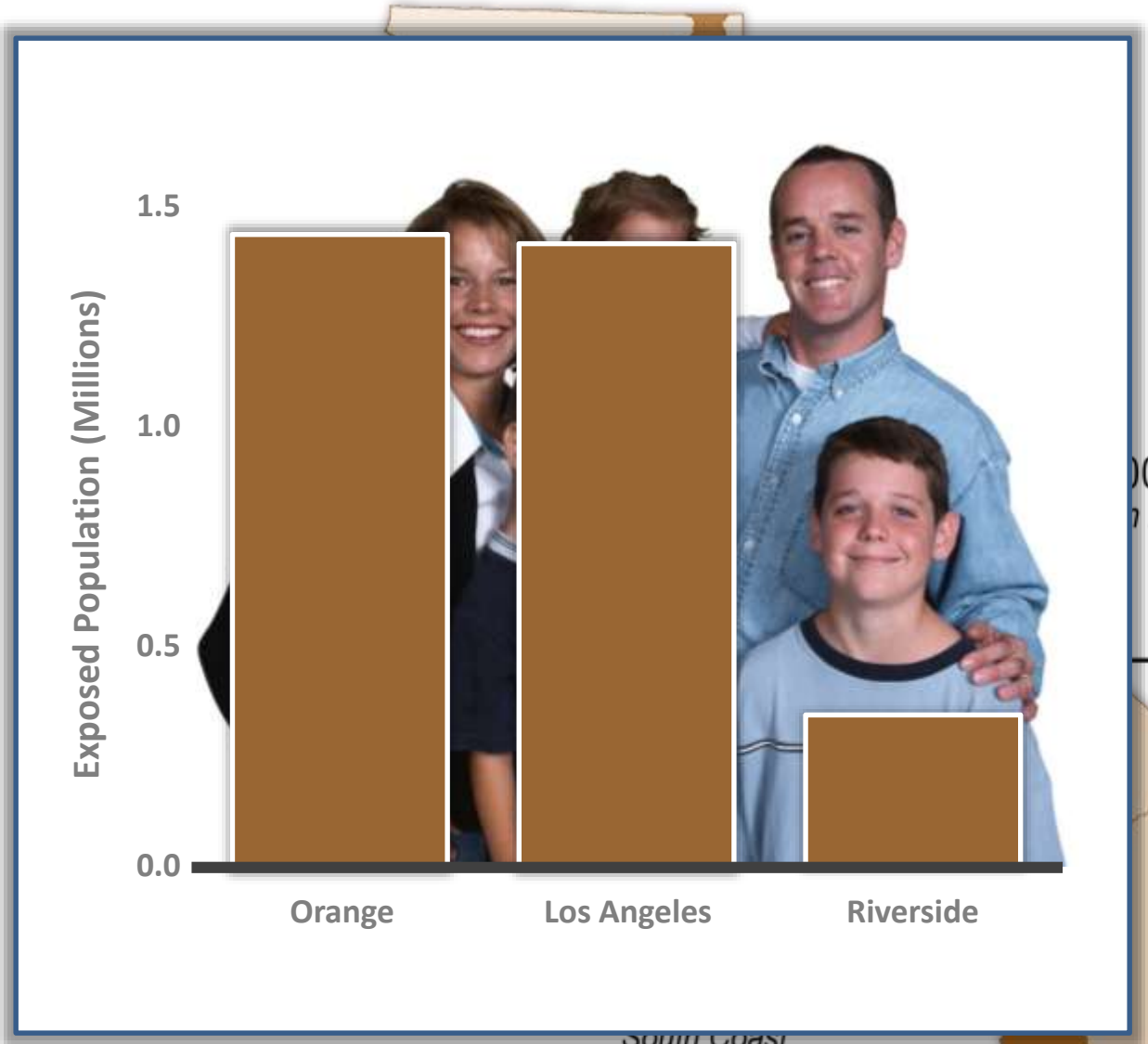

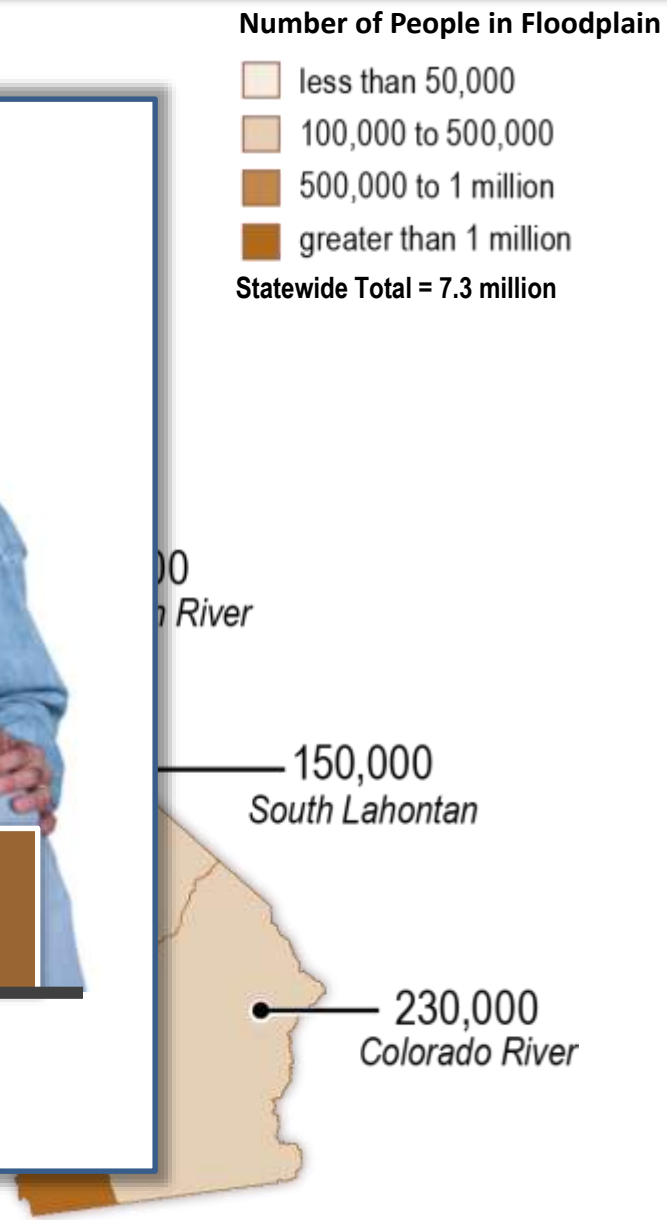

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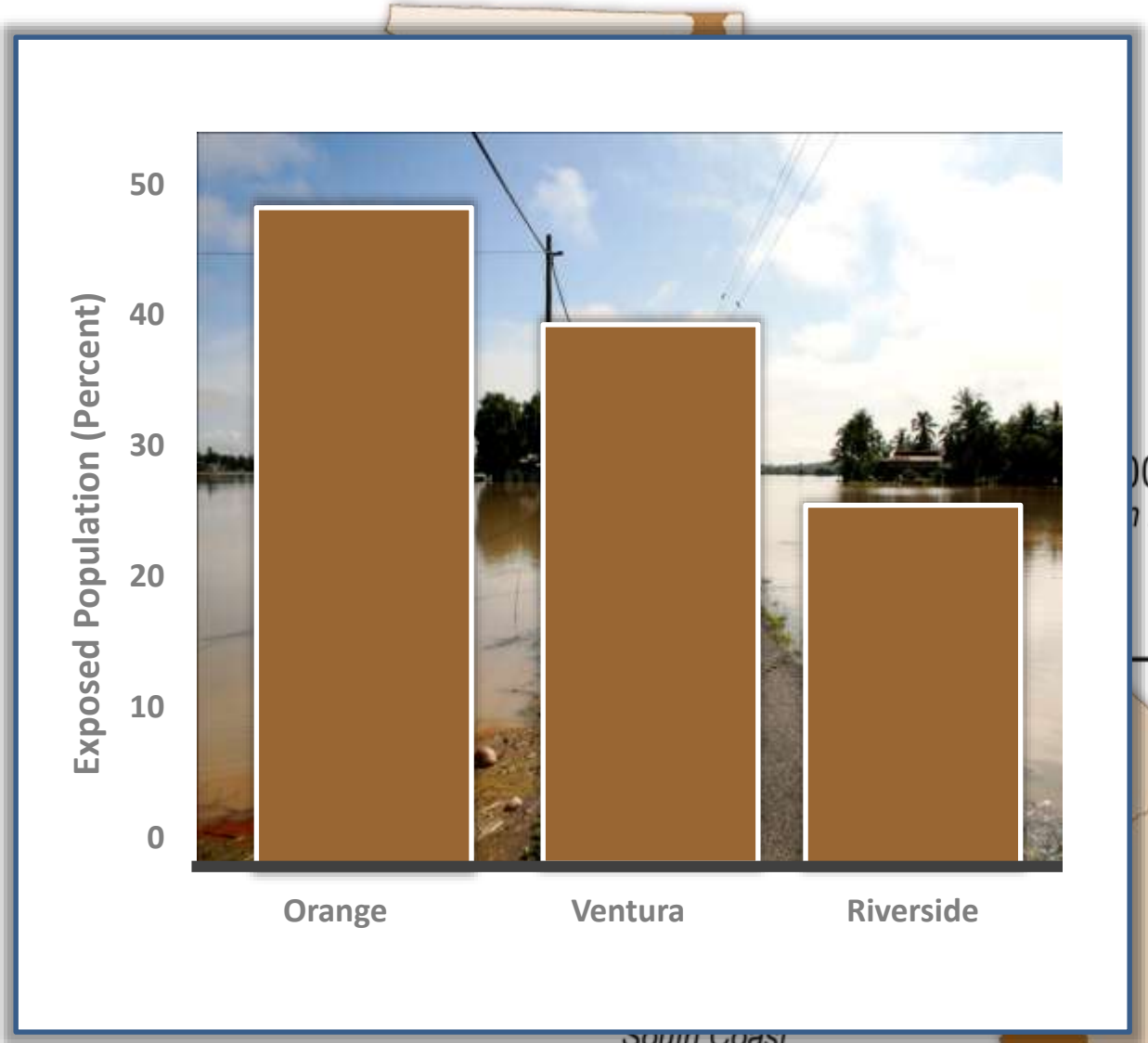

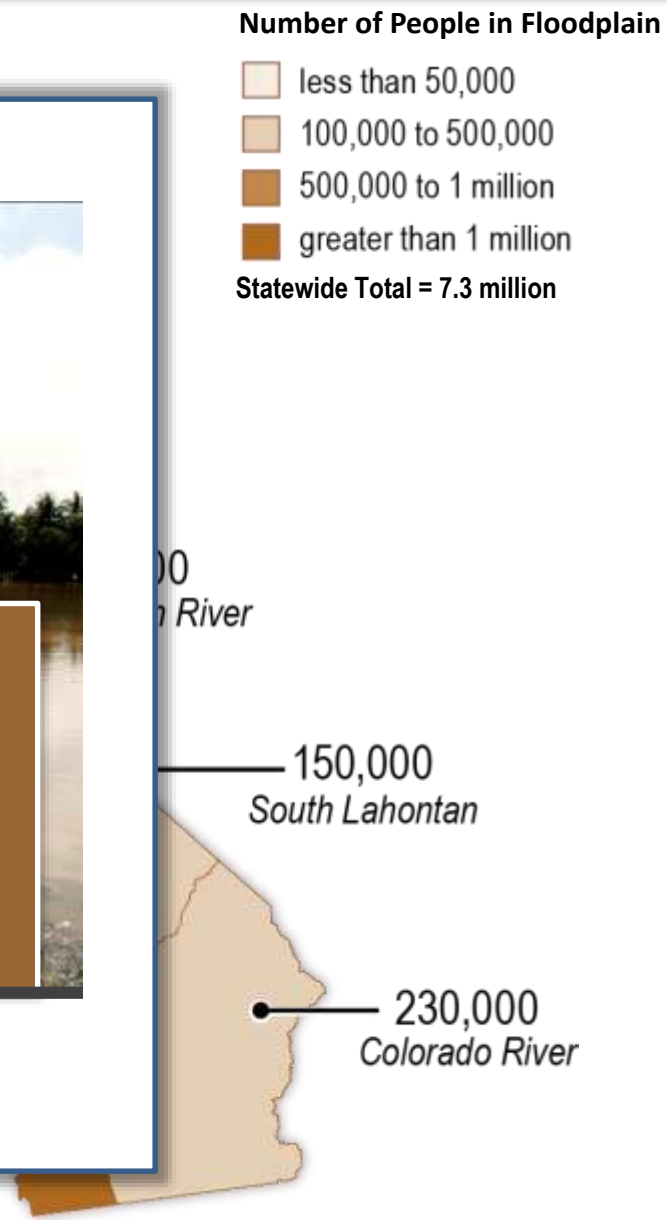

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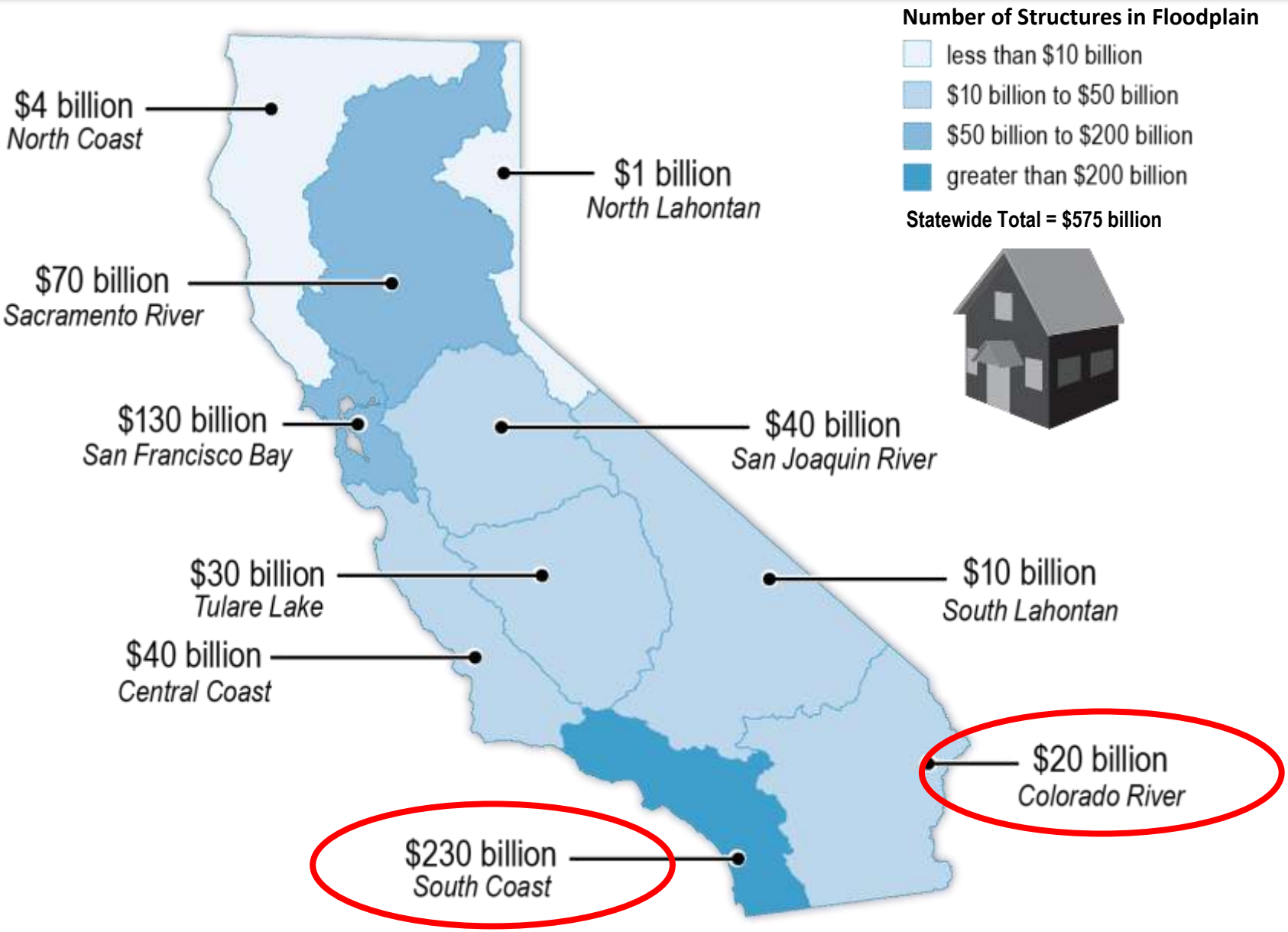
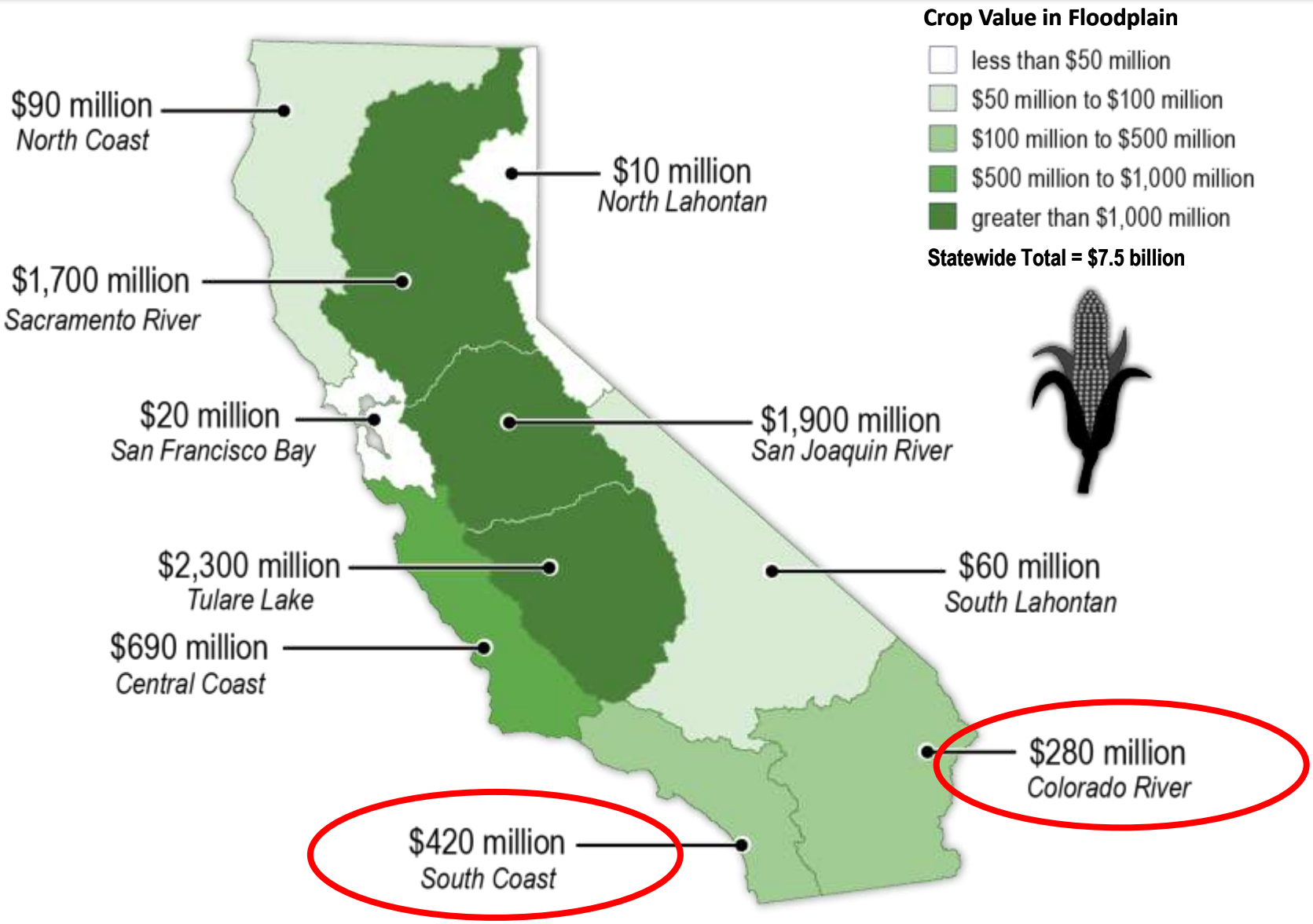
$575 billion in structures are at risk



California's agricultural economy is at risk



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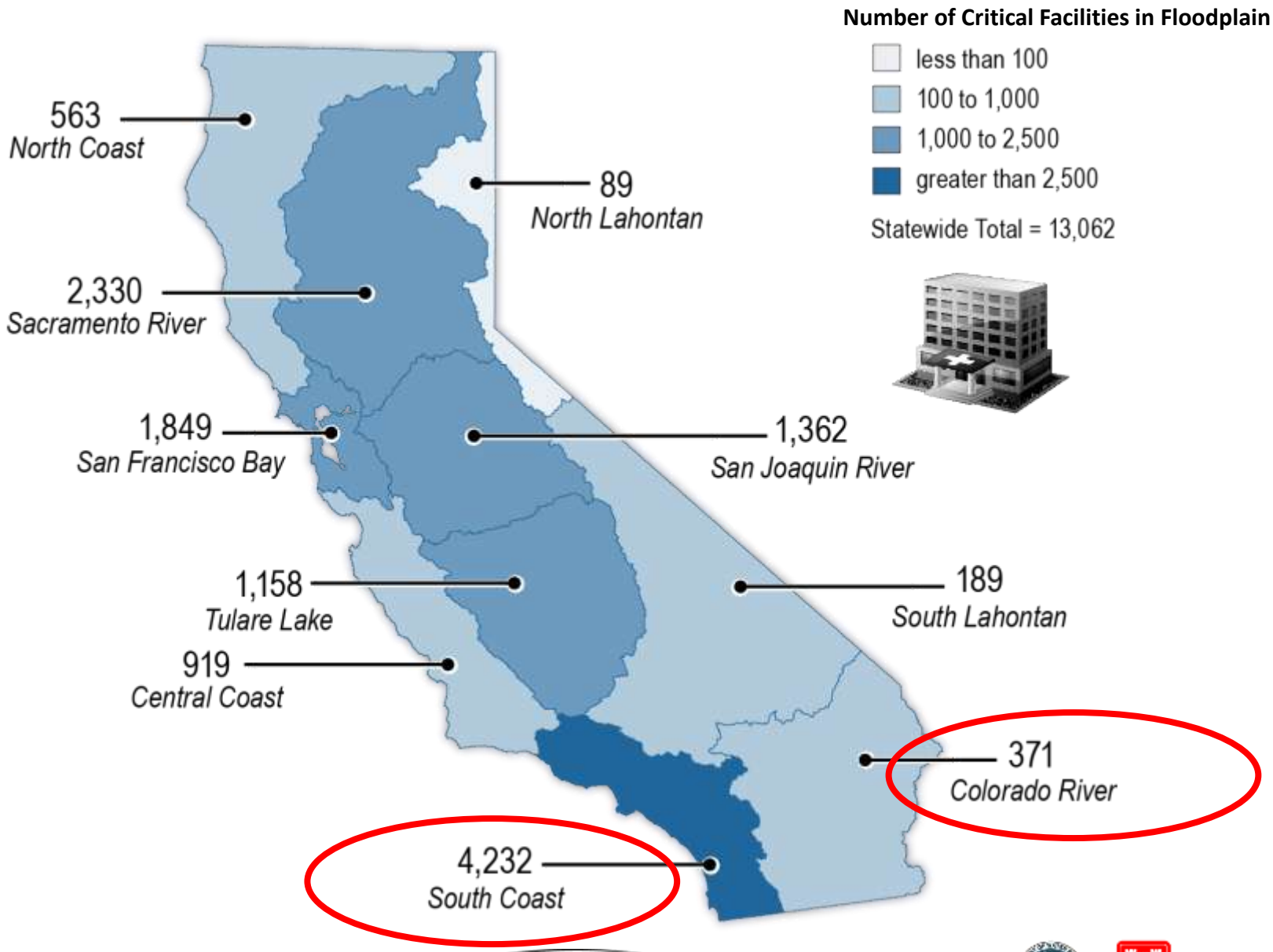
Critical facilities are at risk



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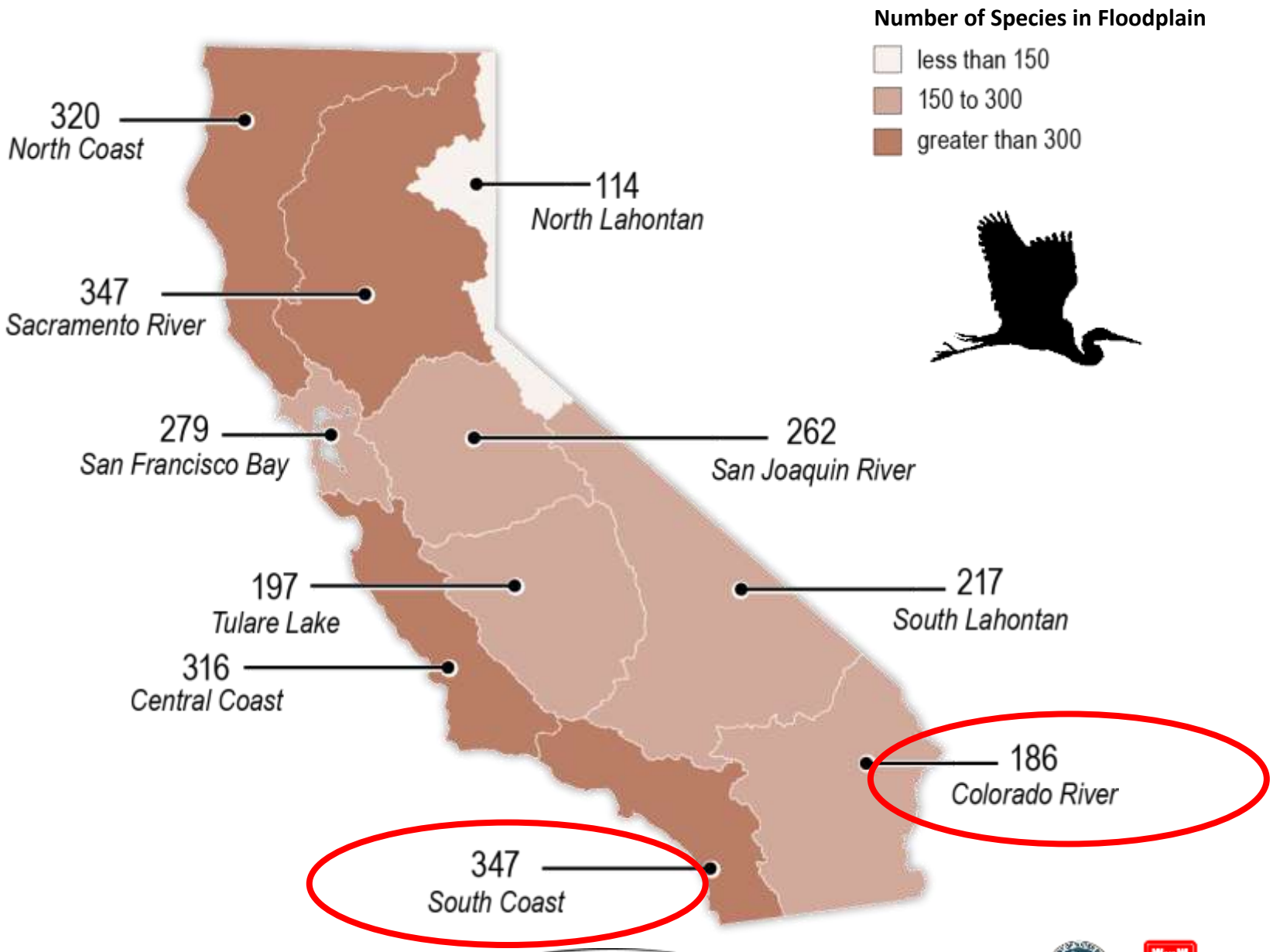
Floodplains are rich in environmental resources



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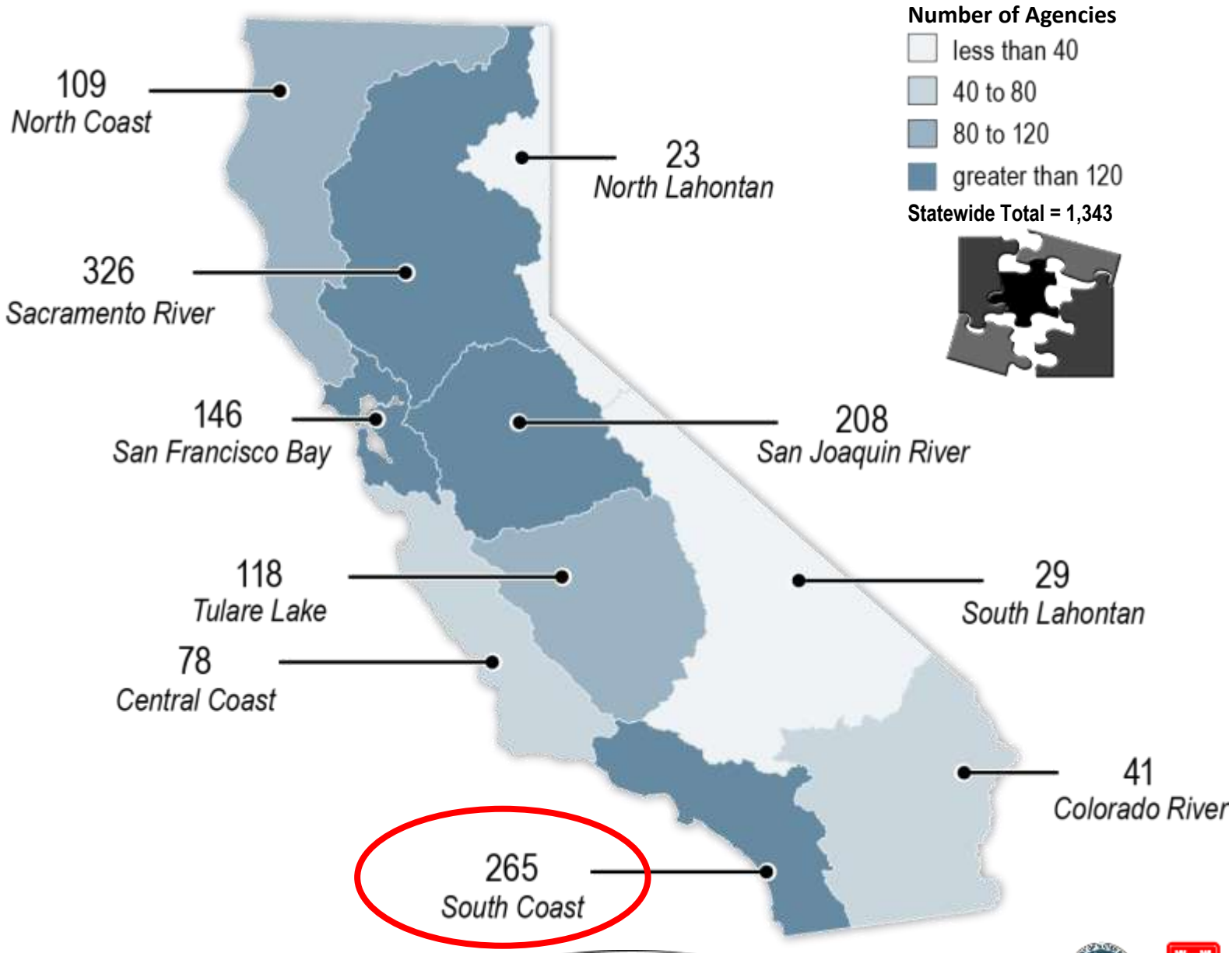
Flood management authority is complex and fragmented



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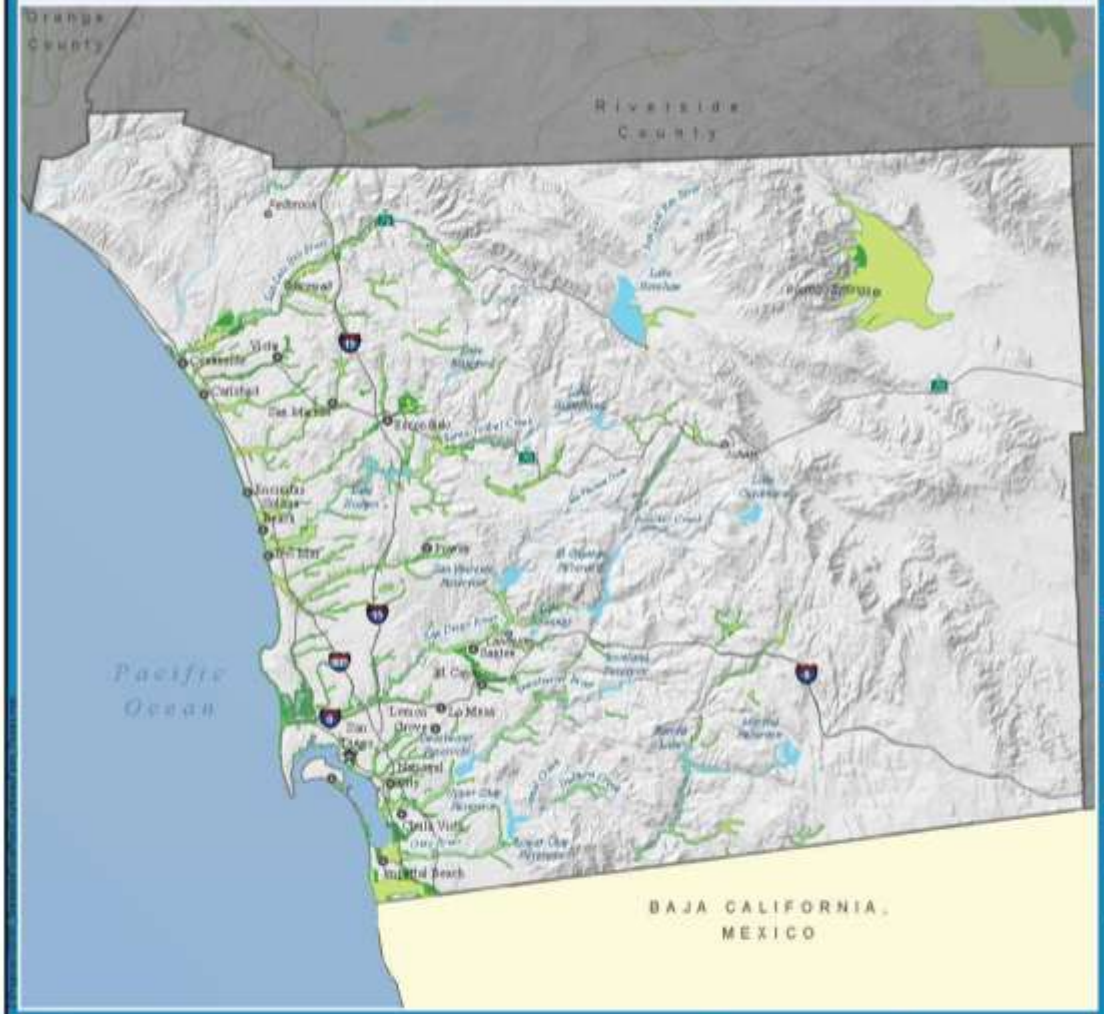
County mapbook example

100-year and 500-year Floodplains



N

0 4.25 8.5 17 Miles

City
Populated Place
Highway
Major River
100-yr Floodplain
500-yr Floodplain
Major Water Body
County

Selected Flood Events by Event Year

1861-1862 Winter, The Great Flood
1916 January, The Hatfield Flood, Sweetwater and Lower Otay Dams
1927 February, San Diego River
1937 February, San Luis Rey River
1965 November-December, Whitewater River, Spring Valley Creek in southeast San Diego, Sweetwater River
1969 January-February, Winter '69 Storms
1976 September, Tropical Storm Kathleen
1978 January-March
1979 January, Cities of La Mesa, Lemon Grove, National City, San Marcos, and San Diego
1980 January-March, San Diego River
1982-1983 December-January, Winter Storms
1995 January-March, Severe Winter Storms
1998 February 6, El Niño Floods
2003 December, Borrego Springs
2004 September-October
2004-2005 December-January, Regional
2008 December
2011 March, Coastal Flooding

Types of Flooding

Likely:
Slow Rise
Flash
Debris Flow
Alluvial Fan
Coastal
Stormwater

Present:
Tsunami
Engineered Structure Failure

Hydrologic Regions

Flood Hazard Exposure

County Statistics

Total Acreage	2.7 million
Total Population	2.8 million
Total Structures	821,400
Total Value of Structures and Contents	$252.6 billion
Total Agricultural Acreage	92,386
Total Value of Crops	$359.3 million

Summary of Exposure to Flood Hazard Reported by County

	100-yr Event	500-yr Event
Exposed Area (acres)	93,991	98,636
Percent of Area Exposed	3	4
Population Exposed	75,704	162,429
Percent of Population Exposed	3	6
Structures Exposed	23,005	50,037
Total Depreciated Replacement Value of Exposed Structures and Contents	$8.5 billion	$17.0 billion
Exposed Crops (acres)	7,605	8,407
Value of Exposed Crops	$27.6 million	$29.7 million
Department of Defense Facilities Exposed	9	9
Essential Facilities Exposed	46	78
High Potential Loss Facilities Exposed	23	40
Lifeline Utilities Exposed	5	12
Transportation Facilities Exposed	221	310
Transportation Segments Exposed (miles)	99	143
Native American Tribal Land Exposed (acres)	138	141
Total Sensitive Plant Species Exposed	122	122
Total Sensitive Animal Species Exposed	89	89

San Diego County

Figure D-73
Summary of Available Flood Types, Flood History, and Flood Hazard Exposure, San Diego County

DRAFT

Mar 22, 2013

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STATEWIDE FLOOD MANAGEMENT PLANNING PROGRAM

DISCLAIMER: The CWP did not develop all the displayed floodplain extents and cannot guarantee their accuracy.

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Local agencies speak out

- Inadequate data
- Limited understanding by Public and Policymakers
- Emergency management coordination
  - Inconsistent land use planning
    - Fragmented responsibility
      - Conflicting permit requirements
        - Unstable funding

Flood infrastructure does not meet current and future needs

- 800+ projects identified statewide
- $30-$50+ billion in improvements and projects
- Will not provide protection from a 100-year flood statewide

Flood funding is limited and unreliable

- Inconsistent and insufficient funding
- Declining local resources
- Reduced Federal cost shares
- Challenging revenue structure
- Cost of flood management misunderstood by public and policy makers

The Solution

Solutions must use an "Integrated Water Management" approach

- Combines flood management, water supply, and ecosystem actions
- Regional and systemwide approach
- Collaboration and cooperation
- Array of funding sources

Recommendation

TOOLS

1. Conduct regional flood risk assessments to better understand statewide flood risk.

Recommendations

TOOLS

2. Increase public and policymaker awareness about flood risks to facilitate informed decisions.

3. Increase support for flood emergency preparedness, response, and recovery programs to reduce flood impacts.

Recommendations

PLANS

4. Encourage land-use planning practices that reduce the consequences of flooding.

5. Conduct flood management from regional, systemwide, and statewide perspectives to provide multiple benefits.

Recommendations

PLANS

6. Increase collaboration among public agencies to improve flood management planning, policies, and investments.

7. Establish sufficient and stable funding mechanisms to reduce flood risk.

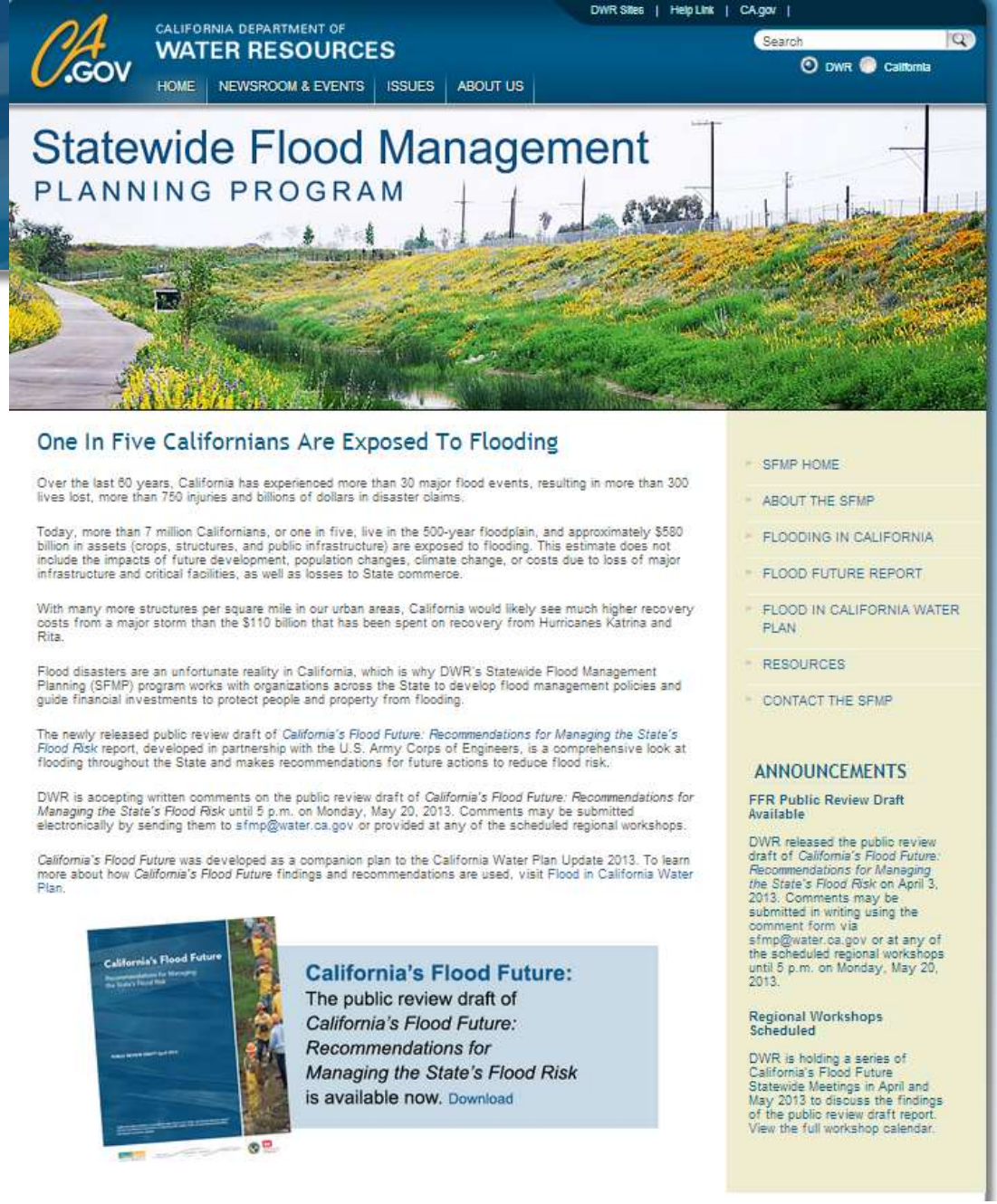
We Must Take Action. Now.

California's future depends on:

- Local, State, Federal, and tribal agencies working together
- Implement policies and projects using an IWM approach
- Increase awareness of the cost and consequences of flooding
- Establish investment priorities and sufficient and stable funding
- Short-term and long-term action and solutions

SFMP Website

For More Information about California's Flood Future : **http://www.water.ca.gov/SFMP**



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Questions

Recommendations

1 Conduct regional flood risk assessments to understand statewide flood risk

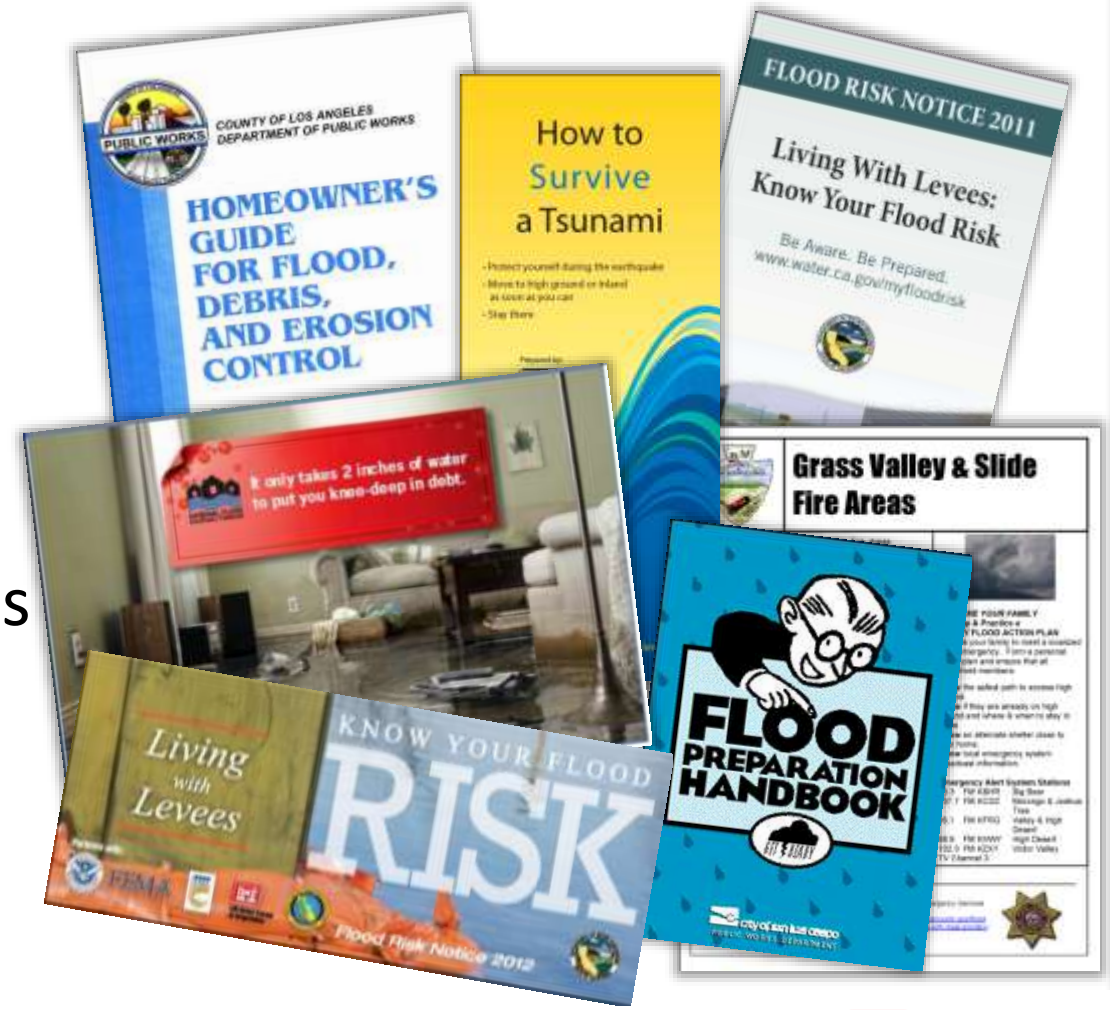
TOOLS

- Identify methods for and conduct regional flood risk
- Set regional flood risk reduction goals
- Identify opportunities to maintain natural systems
- Assess climate change and sea level rise impacts

2 Increase public and policymaker awareness about flood risks to facilitate informed decisions

TOOLS

- Develop consistent messaging
- Provide outreach materials
- Promote Online information resources
- Share data and information



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3 Increase support for flood emergency preparedness, response, and recovery programs to reduce flood impacts

TOOLS

- Provide increased flood readiness funding
- Develop or improve Flood Emergency Management Plans
- Conduct regular flood emergency exercises
- Identify data/forecasting needs

4 Encourage land-use planning practices that reduce the consequences of flooding

PLANS

- Develop planning principles for development in floodplains
- Facilitate coordination and alignment between planners and emergency managers
- Incentivize best management practices

5 Implement flood management from regional, systemwide, and statewide perspectives to provide multiple benefits

PLANS

- Identify regional flood planning areas
- Prioritize flood management projects
- Improve State and Federal Processes
- Coordinate regional water and flood management
- Link funding to an IWM approach

6 Increase collaboration among public agencies to improve flood management planning, policies, and investments

ACTIONS

- Utilize regional working groups
  - *Permits*
  - *Plans*
  - *Implementation*
- Provide funding, grant, and in-kind credit programs
- Prioritize flood management investments

7 Establish sufficient and stable funding mechanisms to reduce flood risk

ACTIONS

- Assess potential funding sources and propose new options
- Facilitate access to funding sources
- Increase funding for priority flood management projects

For more information:

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http://www.water.ca.gov/SFMP

Statewide Flood Meetings

Regional meetings to discuss the report:

April 8 – Marin County

April 9 – Santa Clara County

April 15 – Sacramento County

April 17 –San Diego County

April 18 – Riverside and
Los Angeles Counties

April 19 – Ventura County

May 9 – Fresno County

May 14 – Humboldt County