

MAY 9, 2019

Overview of Flood Management in California

PRESENTED TO:

Assembly Governmental Organization Committee
Hon. Adam Gray, Chair

And

Assembly Water, Parks, and Wildlife Committee
Hon. Eduardo Garcia, Chair

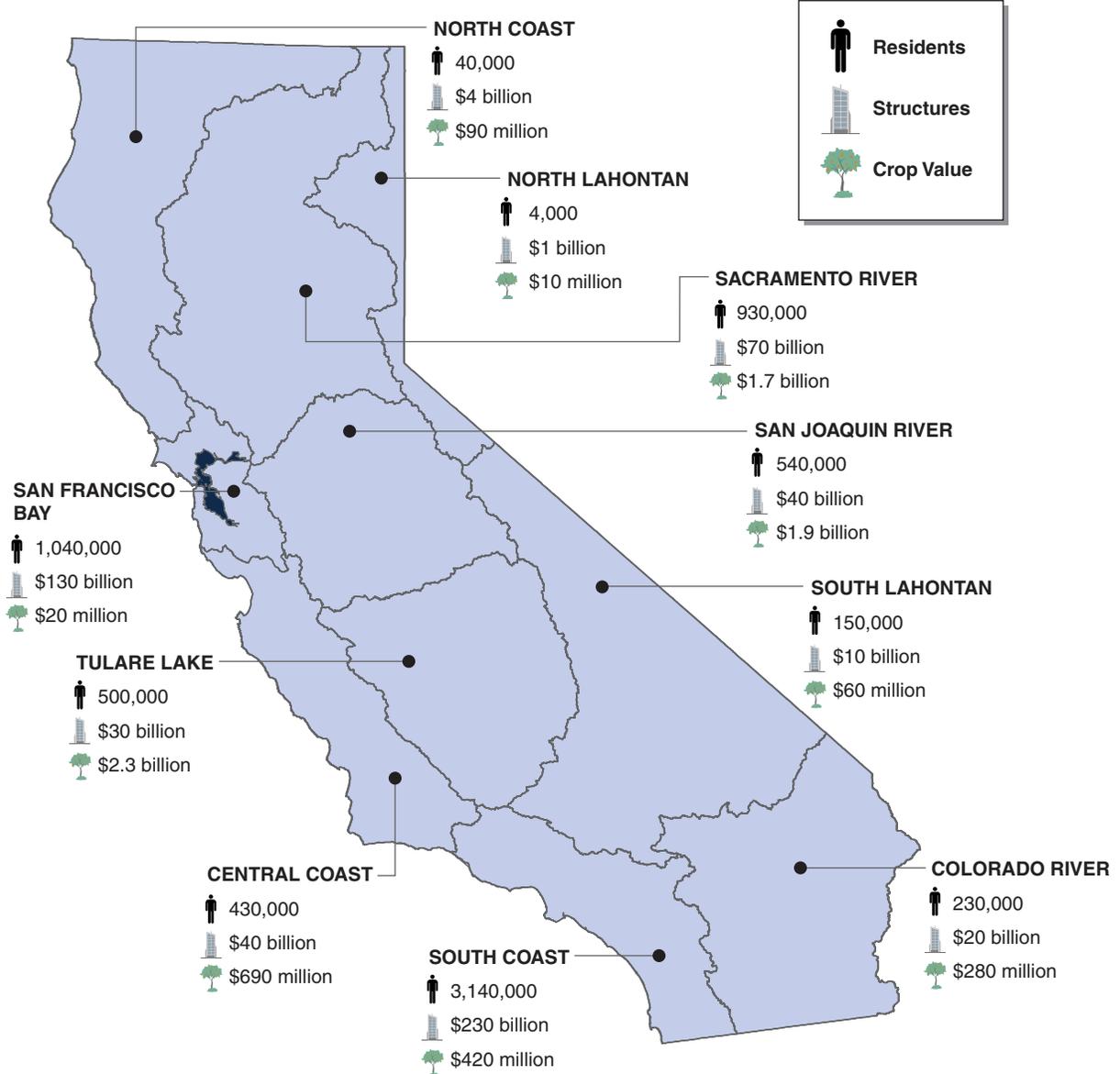


LEGISLATIVE ANALYST'S OFFICE

California Faces Widespread Flood Risk

Exposure to 500-Year Flood by Region

By Hydrologic Region



Source: *California's Flood Future: Recommendations for Managing the State's Flood Risk* (Department of Water Resources and U.S. Army Corps of Engineers, 2013).



Flood Management Handled by Numerous Governmental Entities

Public Agencies With Major Flood Management Responsibilities

Agency	Primary Responsibilities
Local	
Cities, counties, and special districts (such as reclamation or flood control districts)	Conduct various activities based on local arrangements, including: constructing, maintaining, and improving levees and flood management structures; developing land use policies; developing disaster mitigation and emergency response plans; leading emergency response and recovery efforts; and levying assessments on landowners to fund flood management efforts.
Federal	
U.S. Army Corps of Engineers	Undertake and authorize changes to capital flood protection projects when authorized by Congress, generally in partnership with state and local agencies (including SPFC levees). Inspect federally constructed levees for compliance with federal standards. Provide planning and assistance to state and local agencies, including during flood events. Provide funding to repair flood-damaged levees if they meet federal criteria. Establish flood storage and release standards for certain reservoirs.
Federal Emergency Management Agency	Operate National Flood Insurance Program, which includes developing flood hazard maps that define flood risk, establishing floodplain management standards, and offering federally backed insurance policies. Provide coordination, assistance, and funding for federally declared flood disasters.
State	
Department of Water Resources	Conduct flood forecasting, hydrology, and climatology studies. Undertake statewide flood management data collection and planning. Inspect, oversee maintenance of, and in some cases conduct projects on, SPFC levees. Operate and maintain SPFC dams, channels, and other structures. Implement flood-related state grant programs. Help coordinate emergency flood response operations.
Central Valley Flood Protection Board	Ensure that appropriate standards are met for the construction, maintenance, and protection of the SPFC.
Office of Emergency Services	Assist local agencies in responding to floods. Provide coordination, assistance, and funding for state-declared flood emergencies.
SPFC = State Plan of Flood Control.	



How California Manages Floods

- ▶ **Most Flood Infrastructure Is Locally Owned and Managed**
 - Statewide flood management infrastructure includes more than 20,000 miles of levees and channels and more than 1,500 dams and reservoirs.

- ▶ **State Has Special Responsibility for Managing Floods in Central Valley**
 - California gave assurances to the federal government that it would oversee and maintain the “State Plan of Flood Control” (SPFC) system along the Sacramento and San Joaquin Rivers. This system includes 1,600 miles of levees, four dams, and seven flood bypasses. The 2003 *Paterno v. California* court decision established state liability for maintaining the SPFC system.
 - For most segments of SPFC levees, the state has developed formal agreements with local agencies to handle regular operations and maintenance.

- ▶ **Floodwaters Can Also Be Managed Through Nonstructural Approaches**
 - In contrast to physical infrastructure—which controls floodwaters—nonstructural approaches adapt to and accommodate flood flows. Such approaches include floodplain restoration and land use policies.
 - Some flood management strategies can yield multiple benefits. For example, restoring natural floodplain functions can accommodate greater flows, help replenish groundwater levels, and enhance habitat for fish and wildlife.



State Responsible for 1,600 Miles of Central Valley Levees

State Plan of Flood Control (SPFC)



Source: California Department of Water Resources.



Flood-Related Spending

- ▶ **Billions of Public Dollars Spent Annually on Flood Management Activities**
 - Estimates range between \$2 billion and \$3 billion annually.
- ▶ **Majority of Flood Management Funding Is Generated and Spent at Local Level**
 - Estimates for expenditures from local sources range from \$1.3 billion to \$2 billion annually. These funds come from various sources, the largest being property taxes.
- ▶ **Federal Government Spending Is Primarily for Large Projects**
 - The US Army Corps of Engineers undertakes flood management projects—with local partners—and typically spends several hundred millions of dollars in California annually. The federal government also funds a share of state and local disaster assistance costs in some cases.
- ▶ **Most State-Level Expenditures Come From Bonds**
 - The state provides several hundred millions of dollars annually for flood management activities, largely through voter-approved general obligation bonds (which are then repaid by the state’s General Fund). Recent state budgets have also included both one-time and ongoing General Fund for Central Valley flood protection activities.

Recent State Bonds Provided \$5.6 Billion for Flood Management Activities
(In Millions)

Year	Proposition Number	Amount
2000	13	\$140
2006	1E	3,790
2006	84	800
2014	1	395
2018	68	460
Total		\$5,585



Key Flood Management Challenges in California

- ▶ **Existing Infrastructure Is Many Years Old**
- ▶ **Infrastructure Is Not Always Designed to Meet Evolving Goals and Conditions**
- ▶ **Flood Management Needs Are Great, but Funding Is Limited and Inconsistent**
 - Most state funding is from bonds, creating difficulties for meeting ongoing needs.
 - Local funds are hard to raise.
 - Funding constraints can complicate multibenefit projects.
 - The need for flood-related investment fades from public awareness between major floods.
- ▶ **Certain Land Use Decisions Can Increase Flood Risk**
- ▶ **Involvement of Multiple Agencies Complicates Flood Management Efforts**

