



# FLOOD MANAGEMENT FUNDING ESSENTIALS

# 2022

**UPDATE**

NOVEMBER 2022

**CENTRAL VALLEY FLOOD PROTECTION PLAN**



## Reducing Central Valley flood risk requires urgent action and a bold funding commitment

The impacts of climate change are increasing the risk of catastrophic flooding over the next 30 years. Great progress has been made to improve flood management in California's Central Valley, but significant State, federal, and local funding is still needed. Public officials at all levels of government must work to create stable financial resources to improve, expand, and maintain flood management facilities so they can perform effectively today and in the future.



ADAPTED FROM ArkStorm, the Role of Atmospheric Rivers and Implications for Sacramento, USGS 2016

## What you should know

- The CVFPP calls for investing \$25 billion to \$30 billion in Central Valley flood management over the next 30 years.
- Current levels of funding fall short of the need. Increased funding is needed at every level of government.
- Climate change is increasing flood risk in the Central Valley. Resilience and economic stability require proactive investment.
- Ongoing strategic planning is critical to filling the funding gap.
- A diverse set of stable, consistent funding mechanisms are needed to fund a flood management system for the 21st century.
- The need is urgent, driven by calls for increased equity, healthy ecosystems, climate resilience, and economic stability.

## California's Central Valley has among the highest flood risks

The cost of catastrophic flooding in the Central Valley would impact the entire state and be felt across the nation.



**1.3 million**

people live and work in Central Valley floodplains



**\$17 billion**

of agricultural economic activity is based in the Central Valley



**\$223 billion**

of homes, businesses and other structures are at risk in the Central Valley

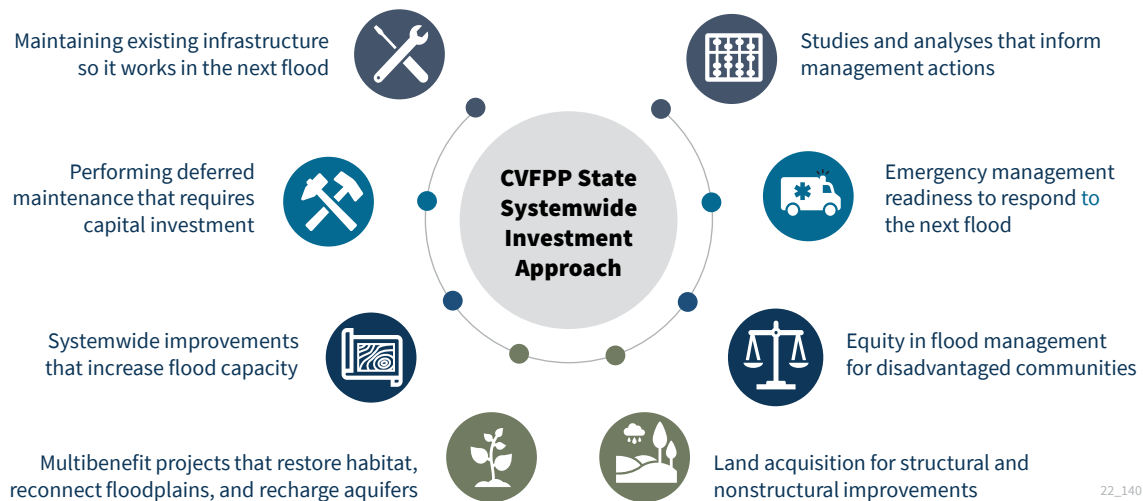


## The Central Valley Flood Protection Plan (CVFPP) is California's strategic blueprint for reducing flood risk in the Central Valley

As our understanding of future hydrologic conditions changes, the CVFPP informs how and where the State of California should invest in Central Valley flood management. The current flood management system was not built to accommodate the level of flooding expected over the next 30 years and requires new and ongoing investment to meet the challenges ahead. The 2022 Update, developed by DWR with significant engagement from the Central Valley Flood Protection Board, public agencies, landowners, and non-governmental organizations, recommends a diverse portfolio of flood management actions by federal, State, and local partners.

## Investment priorities

To determine investment needs, the CVFPP integrates top-down policy goals, bottom-up regional priorities, and current climate change science. The portfolio of actions must strike a balance between urban, small community, rural, and systemwide needs.



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## Now is the time to prepare for floods

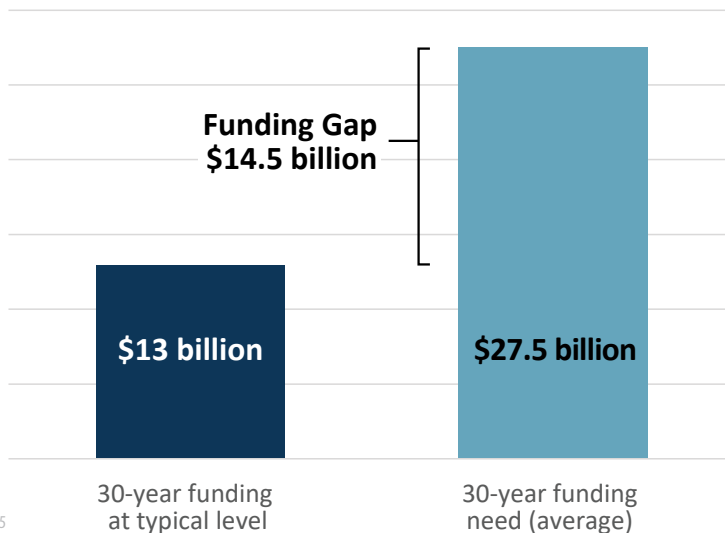
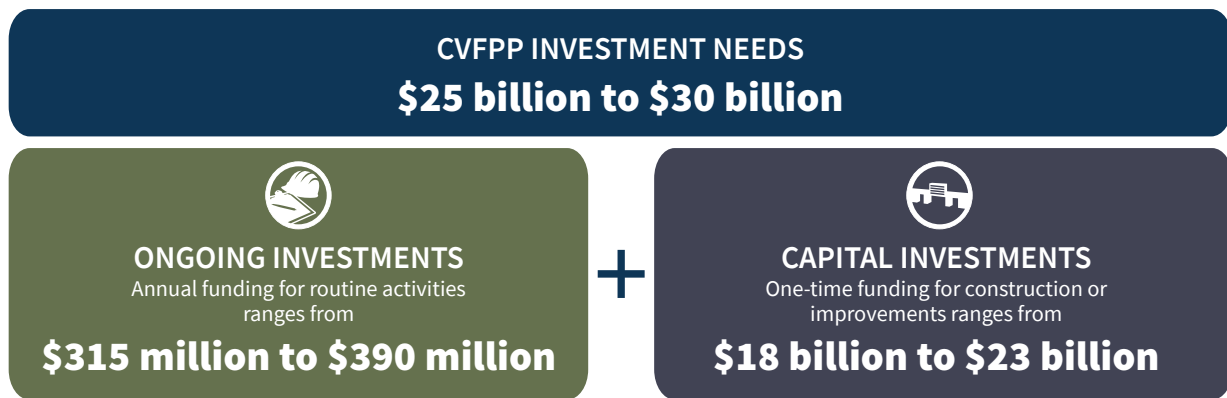
Flood risk may be difficult to imagine during a period of drought. But flood and drought are closely connected, representing the two extremes of a changing water cycle. Climate change is increasing the risk of significant storms and floods happening in the middle of long-term, persistent drought.

PHOTO: NORM HUGHES, DWR 1986



## Current funding levels fall short of the need

Typical levels of public funding dedicated to Central Valley flood management fall below the projected investment need over the next 30 years. The flood management system is only as strong as its weakest link; failing to close this funding gap leaves the entire Central Valley flood management system vulnerable.



At typical levels of past investment, nearly half of the portfolio of recommended actions in the CVFPP could go unfunded, putting communities at unnecessary risk.

The first step toward achieving the 30-year funding need is to invest \$3.2 billion over the next 5 years.

**“Communities in the region, Tribes, landowners, farmers, and businesses depend on our commitment to act swiftly and invest boldly.”**

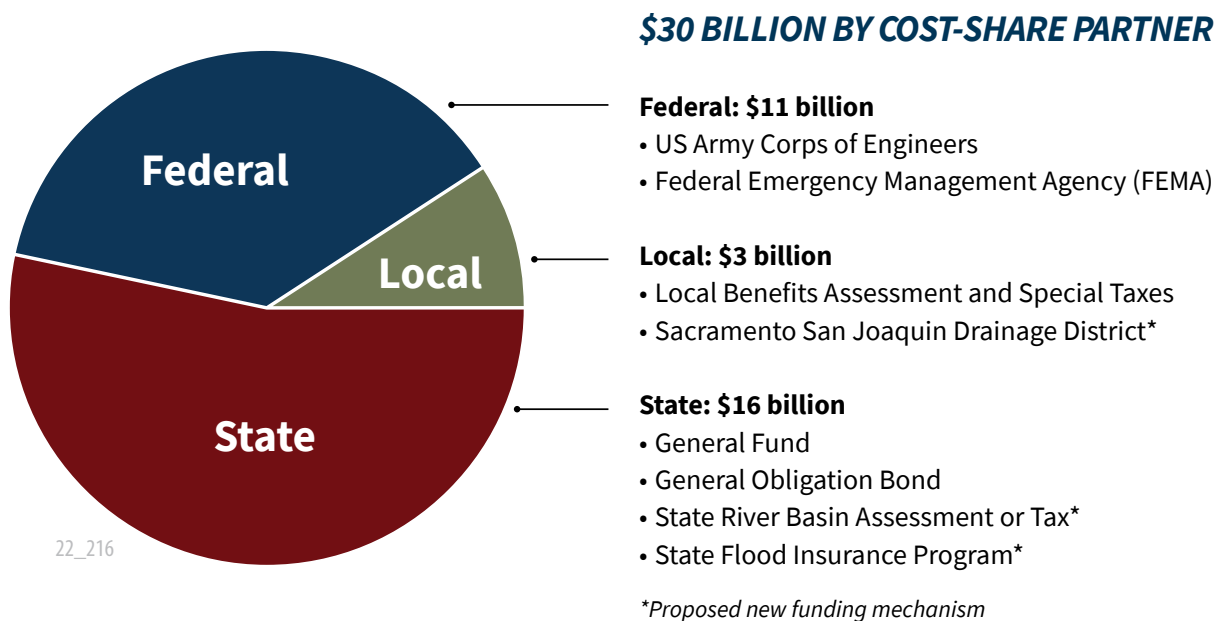
*Karla Nemeth, Director, California Department of Water Resources &  
Jane Dolan, President, Central Valley Flood Protection Board*



## Every level of government plays a role in closing the funding gap

All cost-sharing partners must increase their contribution to flood management to close the funding gap over the next 30 years. The 2022 CVFPP Update recommends a portfolio of new and existing funding mechanisms to meet this need while providing more flexibility, timeliness, and resiliency to funding.

# Sharing the investment need



## Increased funding requires close collaboration

- **Greater flood risk awareness.** Building support for more funding requires greater visibility of the risk and consequences of catastrophic flooding. Simple, straightforward communication of climate change science and flood risk should be a top priority for the State.
- **State support for local agencies.** Many local agencies lack the resources to complete federal funding applications, which are costly and complex. Broad State support is needed to help local agencies navigate the application process and meet funding requirements, especially in vulnerable communities.
- **Continued State-local partnerships.** To be successful, project proponents must show how a project fits into broader comprehensive planning. The State must strengthen local partnership so that more projects succeed in receiving State and federal funding when available.



## Proactive investment saves money and lives

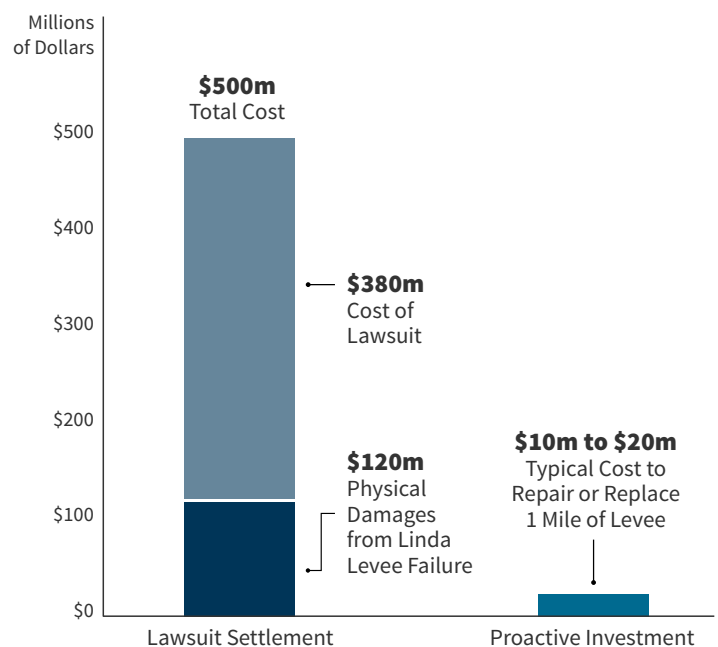
Without adequate flood management investment, the State may face as much as \$3.2 billion in damage and 500 deaths on average per year by 2072. Public safety and fiscal responsibility demands consideration of this liability, and proactive investment to minimize it.

### Learning from history

#### **THE 1986 LINDA LEVEE FAILURE**

In 1986 the Feather River breached its levees, flooding 4,000 homes and businesses, displacing more than 24,000 residents, and killing two people.

The State was found liable and California taxpayers were ultimately responsible for paying \$500 million in damages and legal fees. Proactive investment to repair or replace this segment of levee would have saved the State hundreds of millions of dollars, and avoided incalculable losses to the local community.



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***The State must act now to identify and address system weaknesses to avoid the next catastrophic failure, preserve economic stability, and protect public safety.***

**“The proposed investment may seem large, but is relatively modest to someone who has spent years thinking about the economic risks of these catastrophic flooding events.”**

*Daniel Swain, Ph.D., UCLA; Sacramento Bee, December 18, 2022*

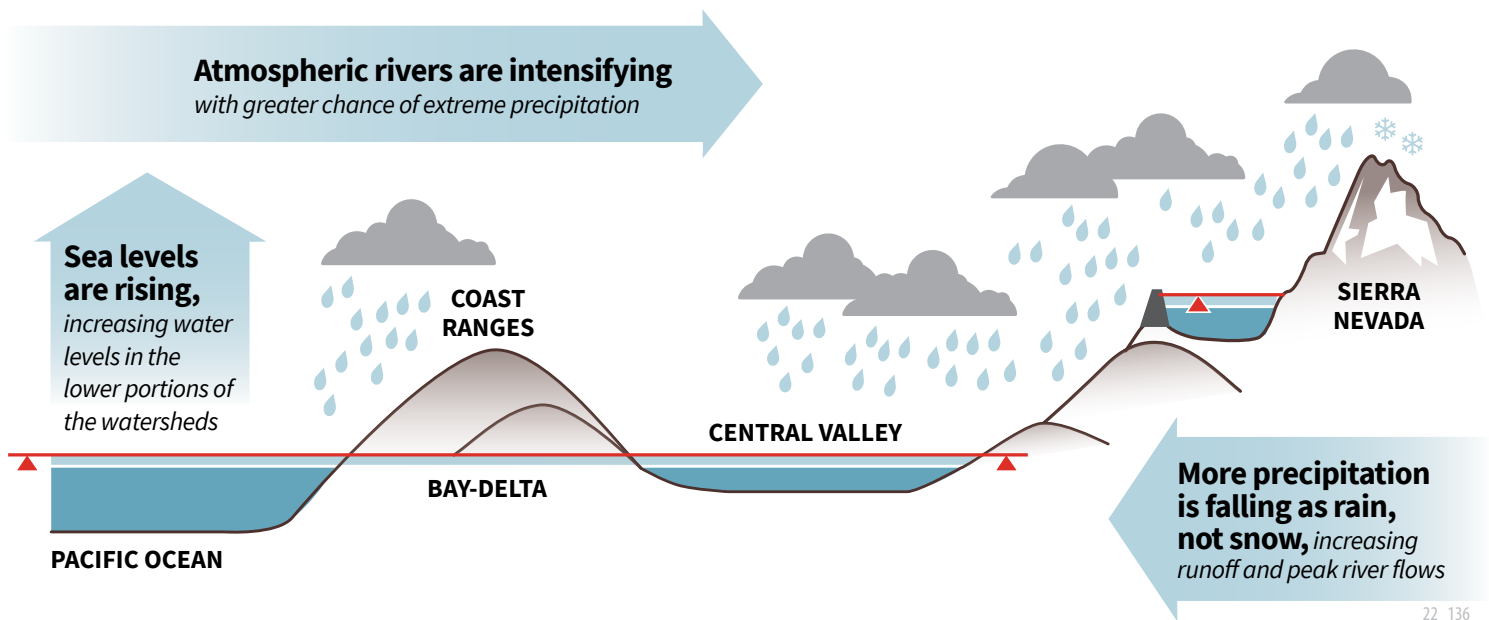


## Climate resilience for flood management requires sufficient funding

Historical levels of investment in flood management will not yield the same benefits now as they have in the past. Alignment with the California Water Resilience Portfolio and the California Water Plan toward creating climate-resilient watersheds and a climate-resilient flood future depends directly on sufficient and stable long-term funding.

## Climate change is increasing risk

Climate change impacts on hydrology in the Central Valley could increase peak flows by up to 500% in certain areas, even with projections of overall drier conditions. The system as currently constructed is uneven in its ability to manage and accommodate these peak flows, particularly in the San Joaquin Valley.



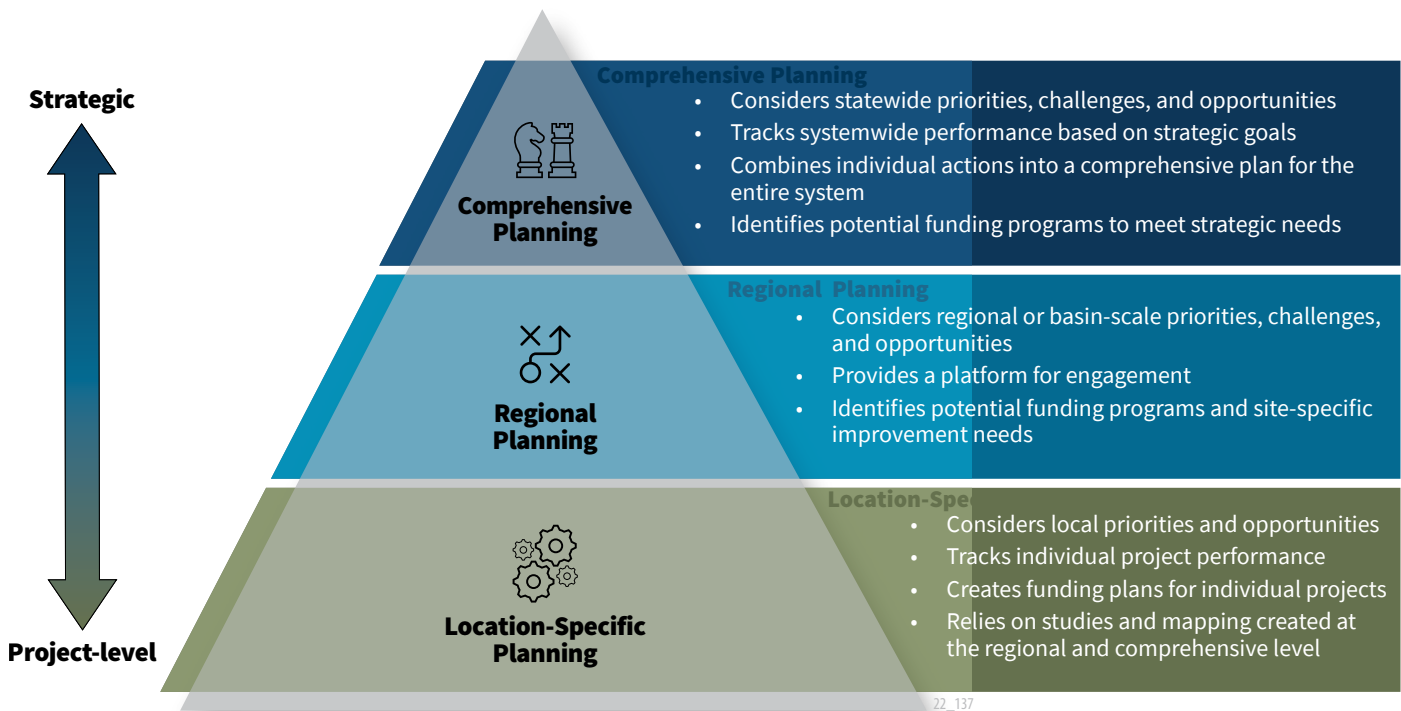
## Flood risk in a changing climate requires us to think more creatively and act more urgently than ever before

Climate change exacerbates existing challenges for all aspects of water resources management. Flood managers must collaborate with other agencies to increase the pace of implementing multi-benefit water resources projects in the Central Valley. Investment in flood management must continue to promote ecosystem resilience, nature-based solutions, groundwater basin recharge, and integrated watershed management.



## Ongoing strategic planning is critical to filling the funding gap

Local projects that are nested in regional and State strategic planning efforts are more likely to receive State and federal funding. Comprehensive planning provided by the CVFPP helps the State align efforts systemwide, evaluate overall funding needs, identify gaps in funding, and develop programs to address strategic aims.



## Local planning works best when aligned with a regional and State vision

When making funding decisions, Federal agencies want to know how individual projects fit into State plans. Local projects that demonstrate how they align with the broader vision of flood management generally receive more interest from Federal agencies, and are more likely to succeed. A comprehensive plan like the CVFPP provides many benefits:

- Creates a vision for a complex system
- Establishes intended outcomes
- Defines a path toward implementation
- Encourages federal engagement
- Smooths the permitting process
- Considers how individual projects fit in the broader system

**“We must use every flood risk reduction tool available and connect with other water management sectors to build resilience in our watersheds.”**

*Karla Nemeth, Director, California Department of Water Resources &  
Jane Dolan, President, Central Valley Flood Protection Board*



## Planning, partnership, and coordination are essential for securing State and federal funding

A whole suite of enabling conditions must be in place before a project is able to secure State and federal funding opportunities. Statewide and regional planning provide a platform for meaningful engagement, coordination, and partnership necessary to develop successful projects. The State must continue providing broad support to project proponents.

## Enabling successful projects



## Engaged planning is key to addressing funding disparities

The San Joaquin River Basin has historically received less funding for flood management projects than the Sacramento River Basin. To address this regional funding disparity, coordinated planning provided by the CVFPP and Regional Flood Management Planning process helps build the foundation of agency relationships, federal engagement, and master planning needed to move projects forward. This process provides a path toward equitable funding in the San Joaquin River Basin.

**“We cannot predict when or where the next major flood will be, but we know it will occur and we must become better prepared.”**

*Karla Nemeth &  
Jane Dolan*



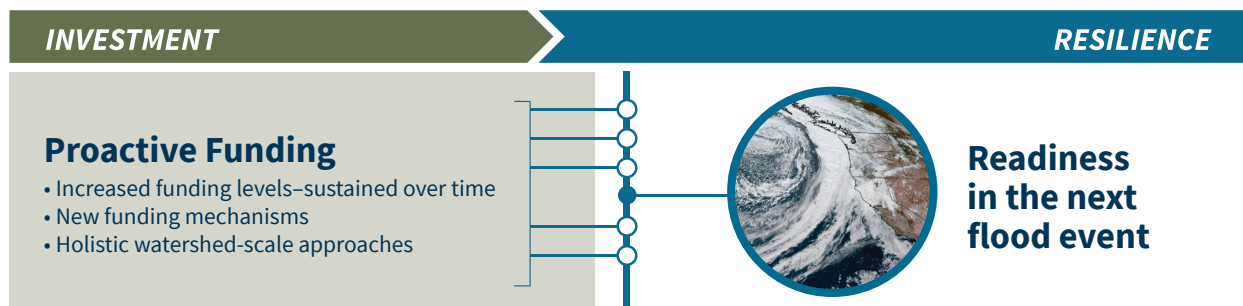
## California's future resilience requires stable, consistent funding

In recent decades, flood management funding from State general obligation bonds has become available in response to historic flood events. Past bond funding is running out. The future of flood management requires proactive investment, new funding mechanisms, and holistic approaches that provide stability and resilience.

### Past flood events triggered reactive funding



### Future resilience-driven funding reduces flood risk





## Statewide goals drive the future of Central Valley flood management

The CVFPP identifies an urgent need for sufficient, long-term funding for flood management. Beyond reducing flood risk, addressing historical impacts of flood management policy requires special consideration and investment. We must improve the current flood management system to meet the challenges of the future, and protect the lives, property, and way of life of all Californians.

### CLIMATE CHANGE RESILIENCE

Climate change impacts in the Central Valley could increase peak flows by up to 500% in some areas, even with overall drier conditions. The State must invest now to ensure that the flood management system is flexible enough to withstand increasingly severe weather events.



### SOCIAL EQUITY

Past flood events have disproportionately affected communities with fewer resources to prepare for, respond to, and recover from a flood. To address these historical patterns, flood management investment decisions require special consideration for socially vulnerable and small communities.



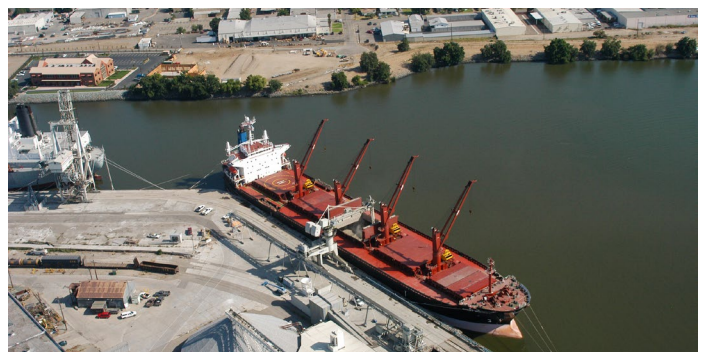
### ECOSYSTEM HEALTH

The historical configuration and management of the flood management system continue to inhibit natural processes. The projected impacts of climate change require focus on building ecosystem resiliency and restoring ecological and geomorphic processes. This effort will require increasing the pace of multi-benefit project investment that emphasizes nature-based solutions.



### ECONOMIC STABILITY

Without adequate flood management investment, the State may face as much as \$3.2 billion in damage and 500 deaths on average per year by 2072, with nationwide impacts. Public safety and economic stability demands consideration of this liability, and proactive investment to minimize it.



PHOTOS (TOP TO BOTTOM): 1 RIVER PARTNERS 2021; 2 DWR, 1986; 3 HT HARVEY; 4 DWR, 200





## Funding CVFPP Flood Management

### Key Takeaways

- The State used both a top down and bottom-up process to recommend a portfolio of actions to reduce flood risk in the Central Valley, totaling \$25 billion to \$30 billion over 30 years.
- The overall funding need is based on a diverse portfolio of actions that balances urban, small community, rural, and systemwide needs and informs how DWR programs should adapt to current priorities.
- Local agencies depend on strong State partnerships for many of the needed actions, such as land acquisition and construction. Broad State support is needed especially for vulnerable populations.
- Preparing for climate change, fostering ecosystem resilience, advancing equity, and preserving economic stability require a renewed urgency in flood management funding.
- Flood resilience in the Central Valley requires stable, dedicated, and consistent funding mechanisms.

### Recommendations

- Respond to climate projections with bold funding and implementation
- Build equity considerations into all flood risk management funding decisions
- Elevate communication of flood risk urgency as a civic priority
- Expand and increase State support to local agencies facing funding challenges
- Pursue all funding opportunities and mechanisms aggressively at the State, local and federal level

*PHOTO, front and back covers, Yolo Bypass and the Vic Fazio Wildlife Area, close to downtown Sacramento. DWR 2009.*



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