

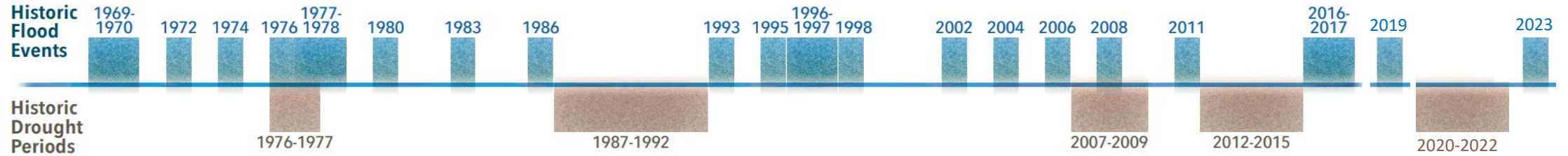
CALIFORNIA DEPARTMENT OF WATER RESOURCES

# Groundwater Recharge and Flood Diversion Actions



Joint Informational Hearing  
Assembly Agriculture Committee and Assembly Water, Parks, and Wildlife Committee  
*Groundwater Recharge*  
*September 17th, 2024*

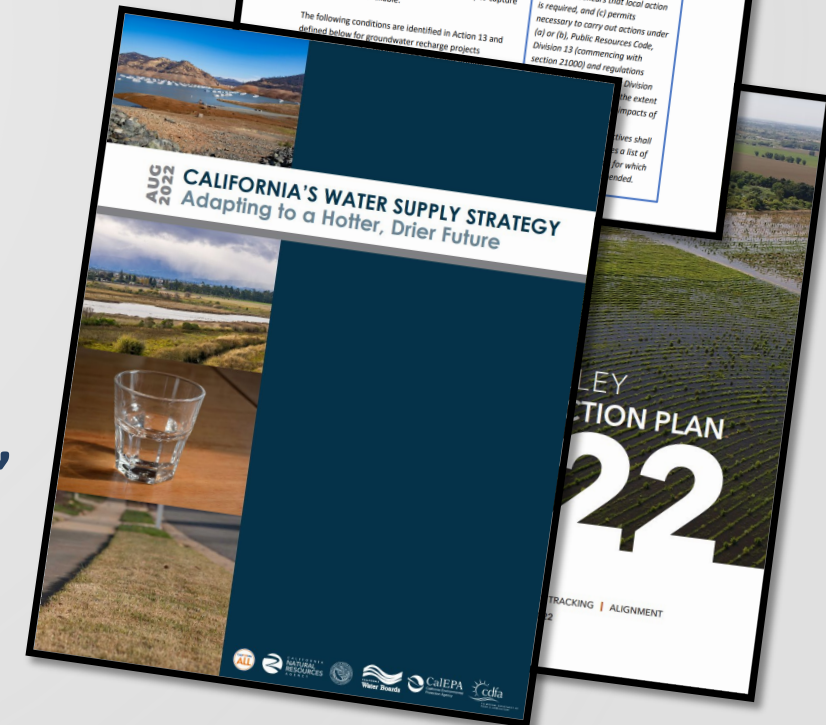
# California's Water Extremes



CA's GROUNDWATER - TOO IMPORTANT NOT TO FULLY UNDERSTAND & USE SUSTAINABLY

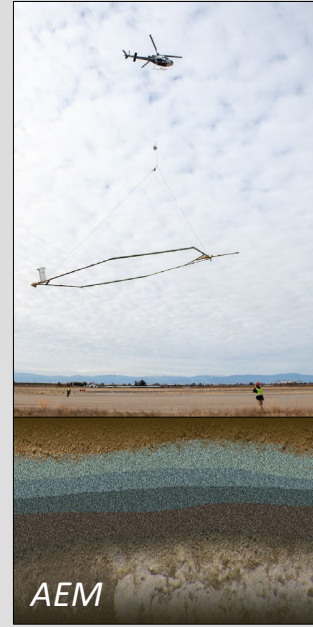
# Expediting Flood Diversion & Recharge: *Drivers For State Action*

- Water Resilience Portfolio
- Governor's Water Supply Strategy: Recharge targets; regulatory assistance on 180-day temporary permits; streamlined Water Rights Permits for Groundwater Storage
- Sustainable Groundwater Management Act
- 2022 Central Valley Flood Protection Plan
- Flood/Drought Executive Order: CEQA suspension for local groundwater recharge projects<sup>3</sup>
- Flood Water Recharge Exec Orders, New Statute (SB 122, 1242.1)



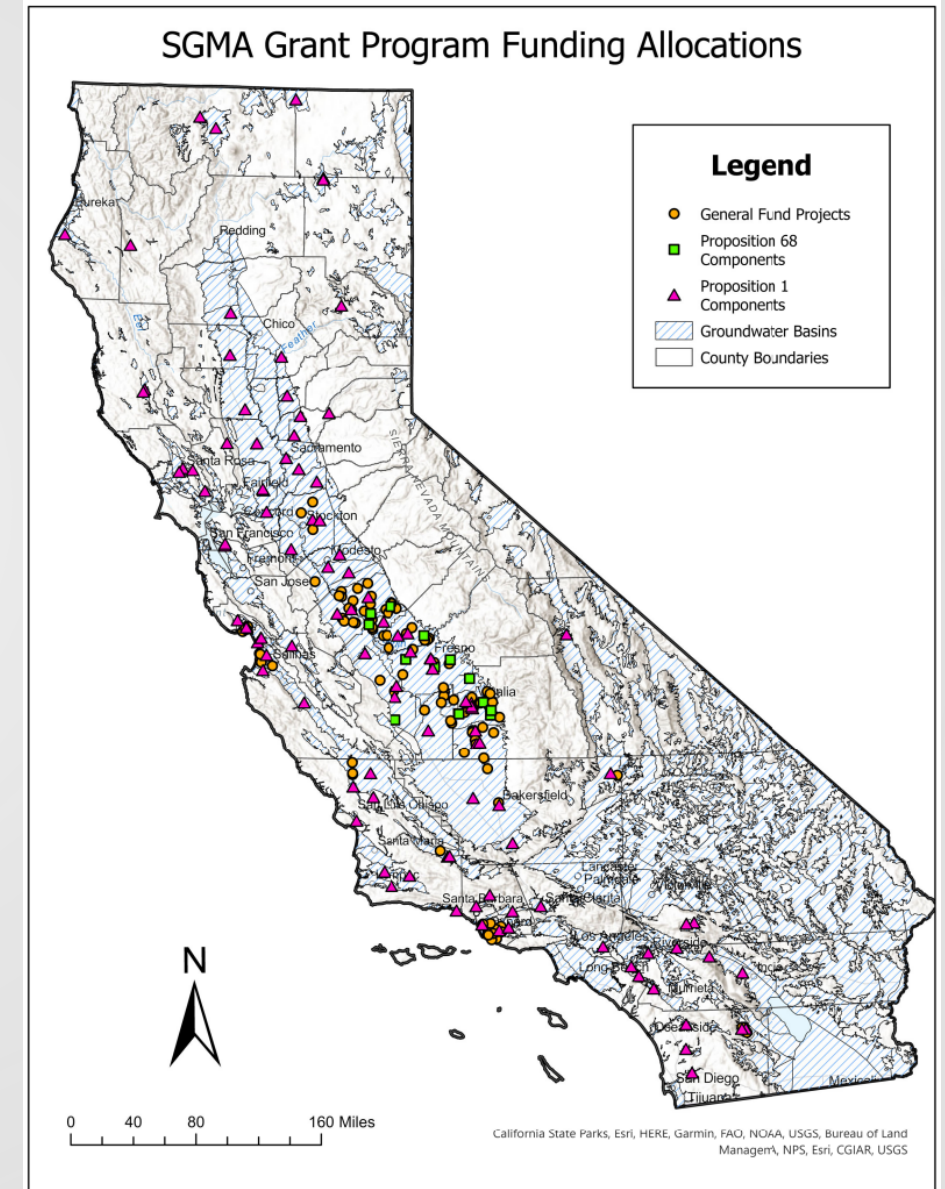
# Expediting Flood Diversion & Recharge: *Assistance*

- **DWR Technical Assistance**
  - San Joaquin Watershed Studies
  - Multi-Benefit Floodplain Restoration Opportunities
  - Working with partners on on-farm demonstration sites
  - Groundwater Basin Characterization and Recharge Suitability
- **DWR Planning and Regulatory Assistance**
  - On-the-ground support for maximizing recharge during flood events
  - Supporting temporary water rights applications
- **DWR Financial Assistance**
  - State Grants supporting planning and implementation projects

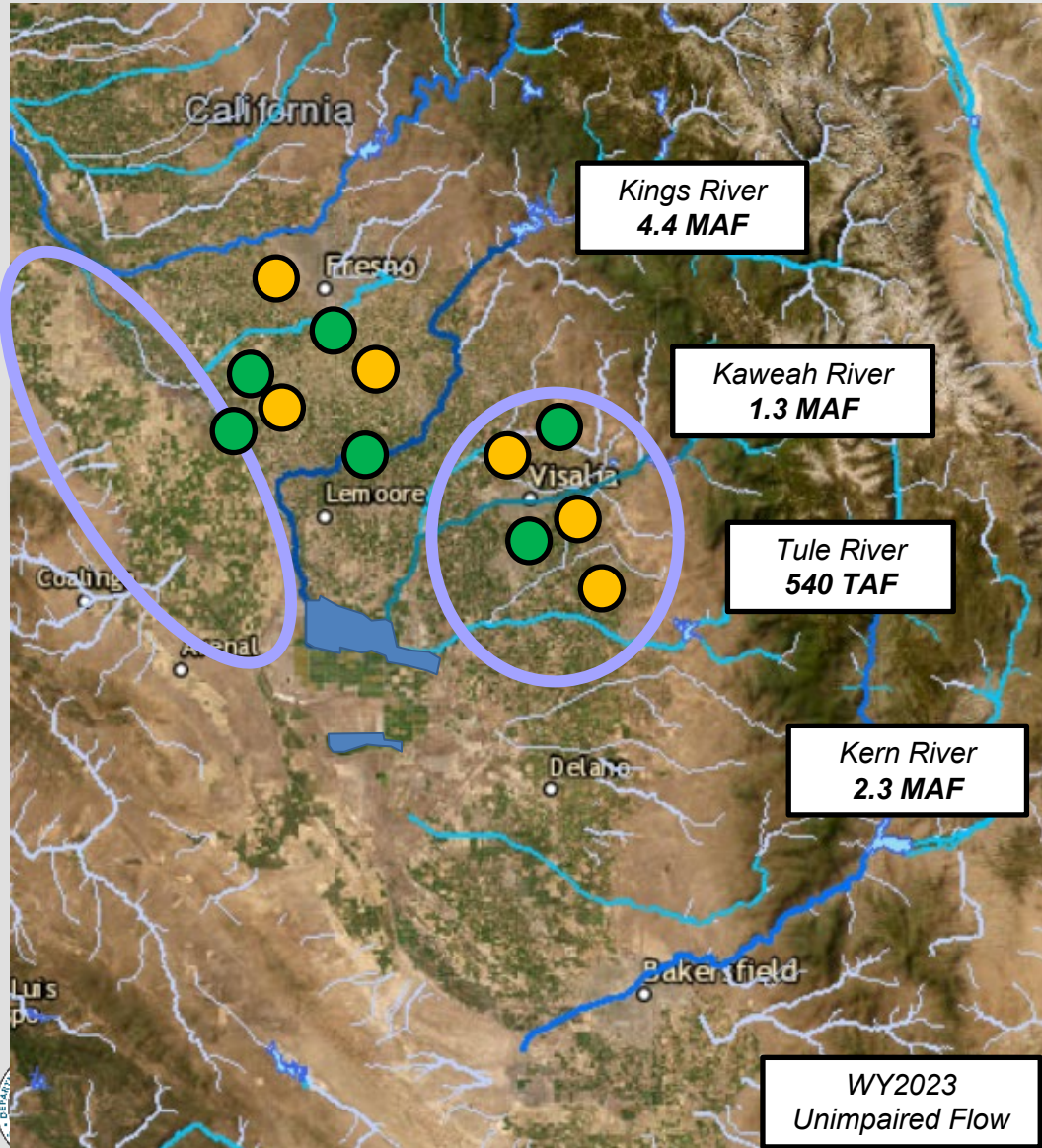


# Expediting Flood Diversion & Recharge: Grants

- \$483 million granted across multiple funding sources
- 390 projects supported
- \$100+ million specifically for recharge projects



# Expediting Flood Diversion & Recharge: *Pilot Efforts*



## ● Temporary Pumps

*Increase Flood Water Diversion and Maximize Recharge*

- 30 pumps, 1 siphon deployed in ~4 weeks
- Emergency Resource Request/Mission Tasking
- Enhanced Local Efforts

## ● Land Clearing

*Increase Acreage to Divert Flood Flows and Expand Recharge*

- Flood Risk Reduction
- Drought Mitigation
- Expedite transition to sustainable groundwater management

## ○ LandFlex

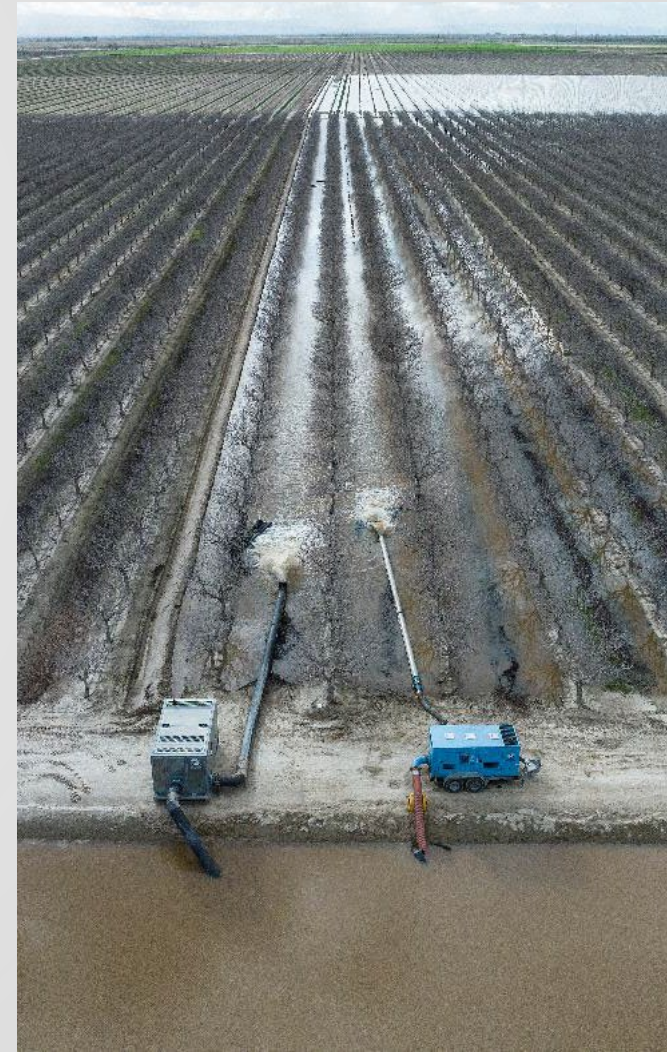
*Protect vulnerable domestic wells; halt unsustainable groundwater pumping*

- 6 GSAs (COD Basins)
- 4,317 acres enrolled
- Benefits to 16,500 + domestic wells
- ~140,000 ac-ft of overdraft water permanently kept in the ground
- Pivoted to include flood protection element January-March 2023



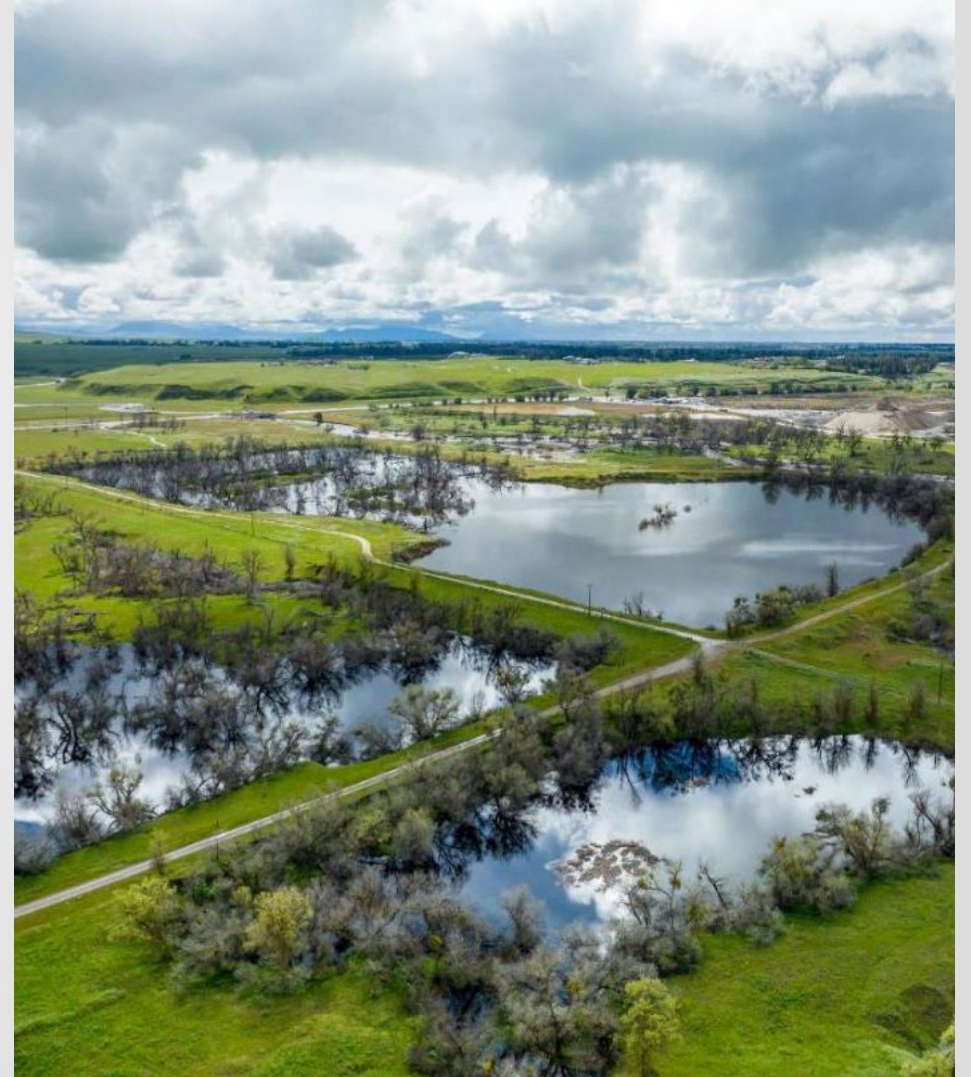
# Importance of Coordinating Flood and Groundwater Management

- **Water supply reliability**
  - Groundwater storage and replenishment
- **Flood risk reduction**
  - Diverting water off the channel during high-flow events (i.e., skimming peak flows) and purposefully delivering water to lands to promote groundwater infiltration.
  - Lowering reservoir storage levels prior to, or during, the flood season or discrete storm events to vacate reservoir storage before anticipated precipitation/snowmelt. The vacated water can be conveyed to specific areas for managed aquifer recharge.
  - Slowing runoff from properties to encourage groundwater infiltration on public and private lands and reduce runoff from entering swollen channels.
- **Ecosystem enhancement**
  - Floodplain restoration and expansion
  - Multiple benefit recharge basins
- **Working lands preservation**
  - Identifying lands compatible with seasonal inundation
  - Preserve areas with high recharge potential or targeted multiple benefit opportunities



# Expediting Flood Diversion & Recharge: *Future Years*

- Explore longer-term opportunities to maximize flood diversion, recharge and water supply management
- Continue collaboration on Streamlining Water Right Permit Process and Flood Diversion Statute (CWC 1242.1)
- Continue Defining Fast-Paths to the Subsurface





CALIFORNIA DEPARTMENT OF WATER RESOURCES

# Flood-MAR Activities

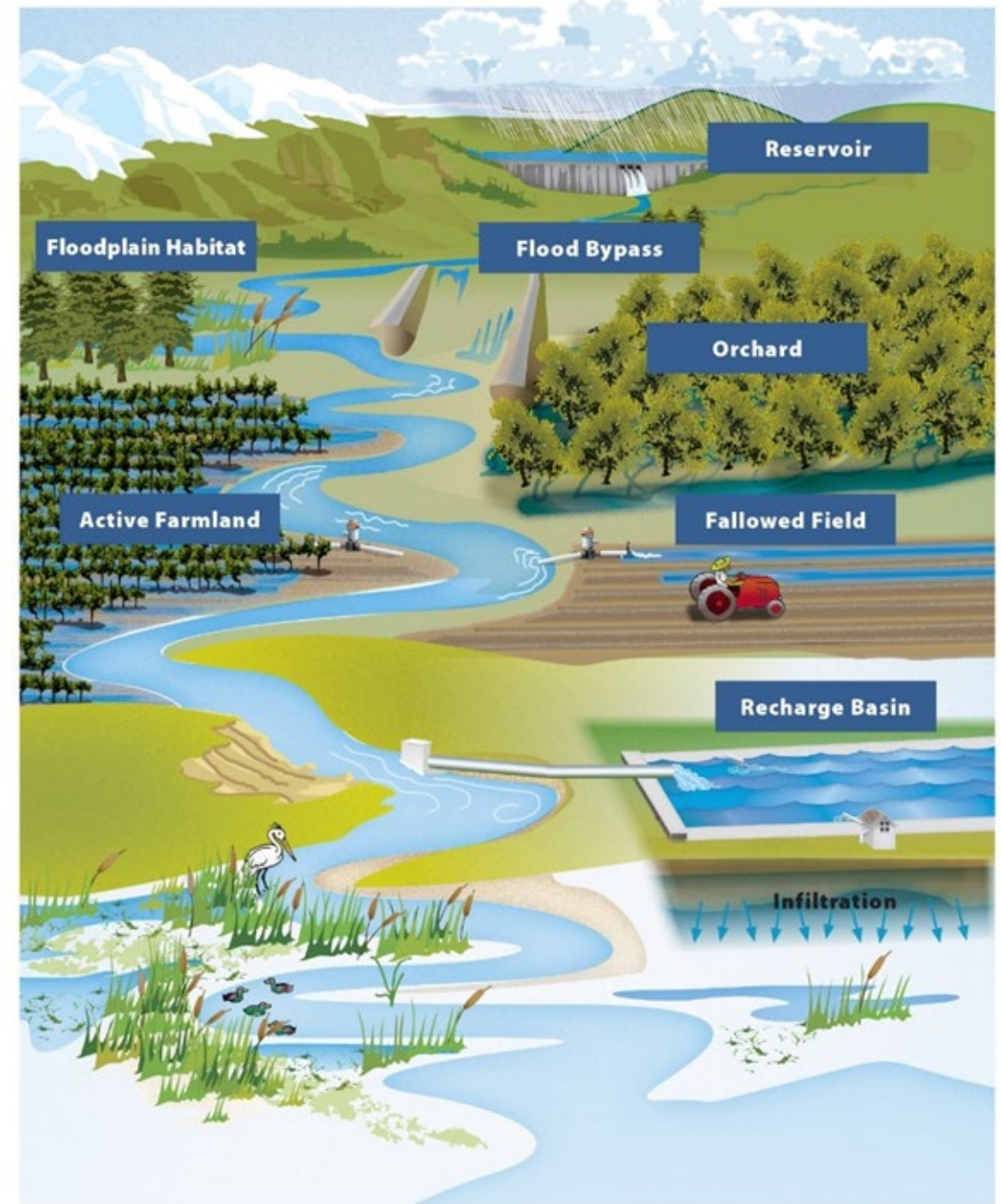
Assembly Committee on Agriculture

SEPTEMBER 17<sup>TH</sup>, 2024

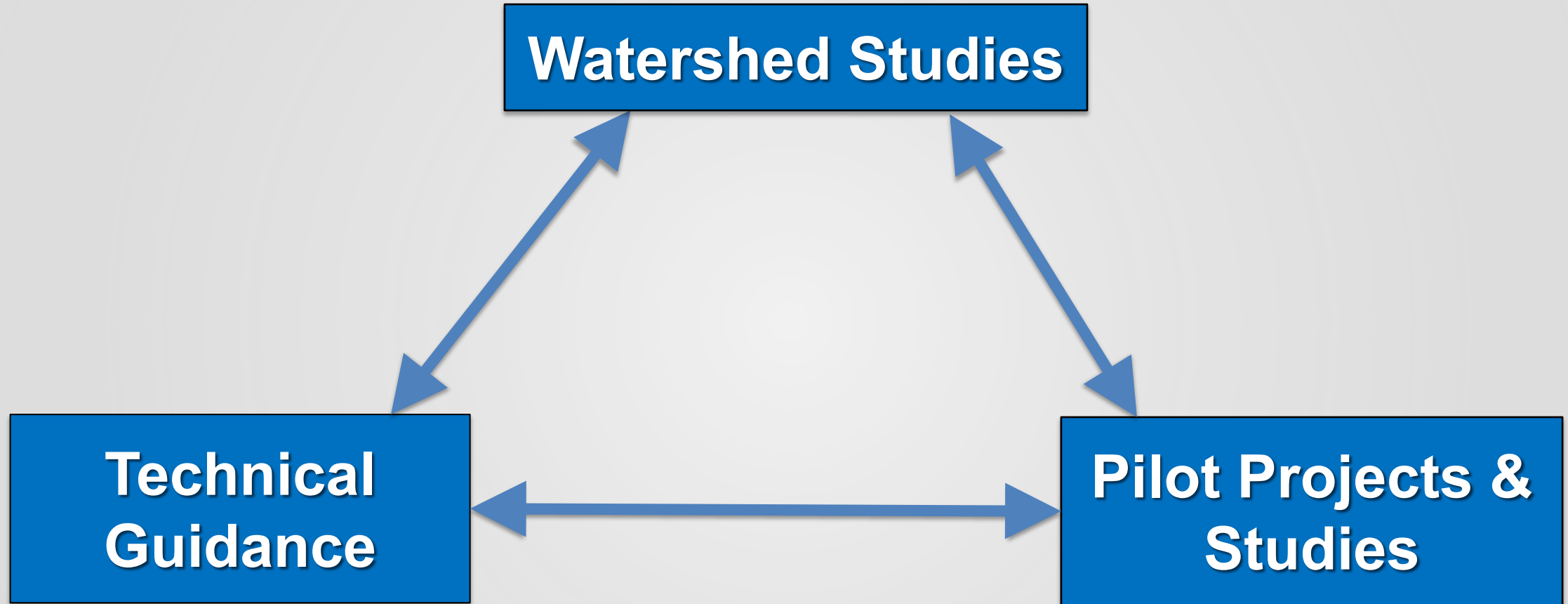


# What is Flood-MAR?

- Integrated water management strategy
- Using high flows from (or in anticipation of) rainfall or snowmelt for managed aquifer recharge
- On agricultural lands, working landscapes, and natural managed lands



# DWR's Flood-MAR Program Activities




# Merced River Watershed Flood-MAR Reconnaissance Study (pilot)

State of California  
California Natural Resources Agency  
Department of Water Resources

## Merced River Watershed Flood-MAR Reconnaissance Study

### Plan of Study



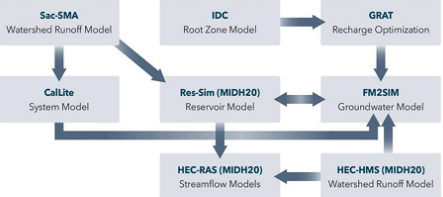
Legend:  
 - Canals  
 - Rivers  
 - Merced Watershed  
 - Merced Study Area  
 - Groundwater Basins

Technical Information Record  
November 2023

State of California  
California Natural Resources Agency  
Department of Water Resources

## Merced River Watershed Flood-MAR Reconnaissance Study

### Analytical Tools Integration

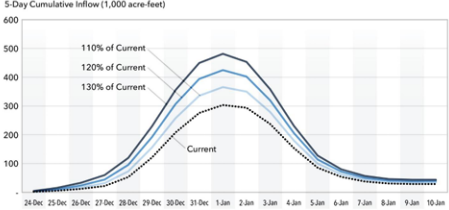


Technical Information Record  
November 2023

State of California  
California Natural Resources Agency  
Department of Water Resources

## Merced River Watershed Flood-MAR Reconnaissance Study

### Baseline Performance and Climate Change Vulnerability

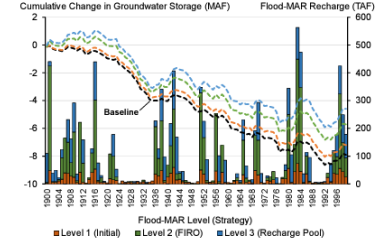


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November 2023

State of California  
California Natural Resources Agency  
Department of Water Resources

## Merced River Watershed Flood-MAR Reconnaissance Study

### Adaptation Strategy Performance



Technical Information Record  
April 2024

## Merced River Watershed Flood-MAR Reconnaissance Study

### STUDY REPORT

March 2024

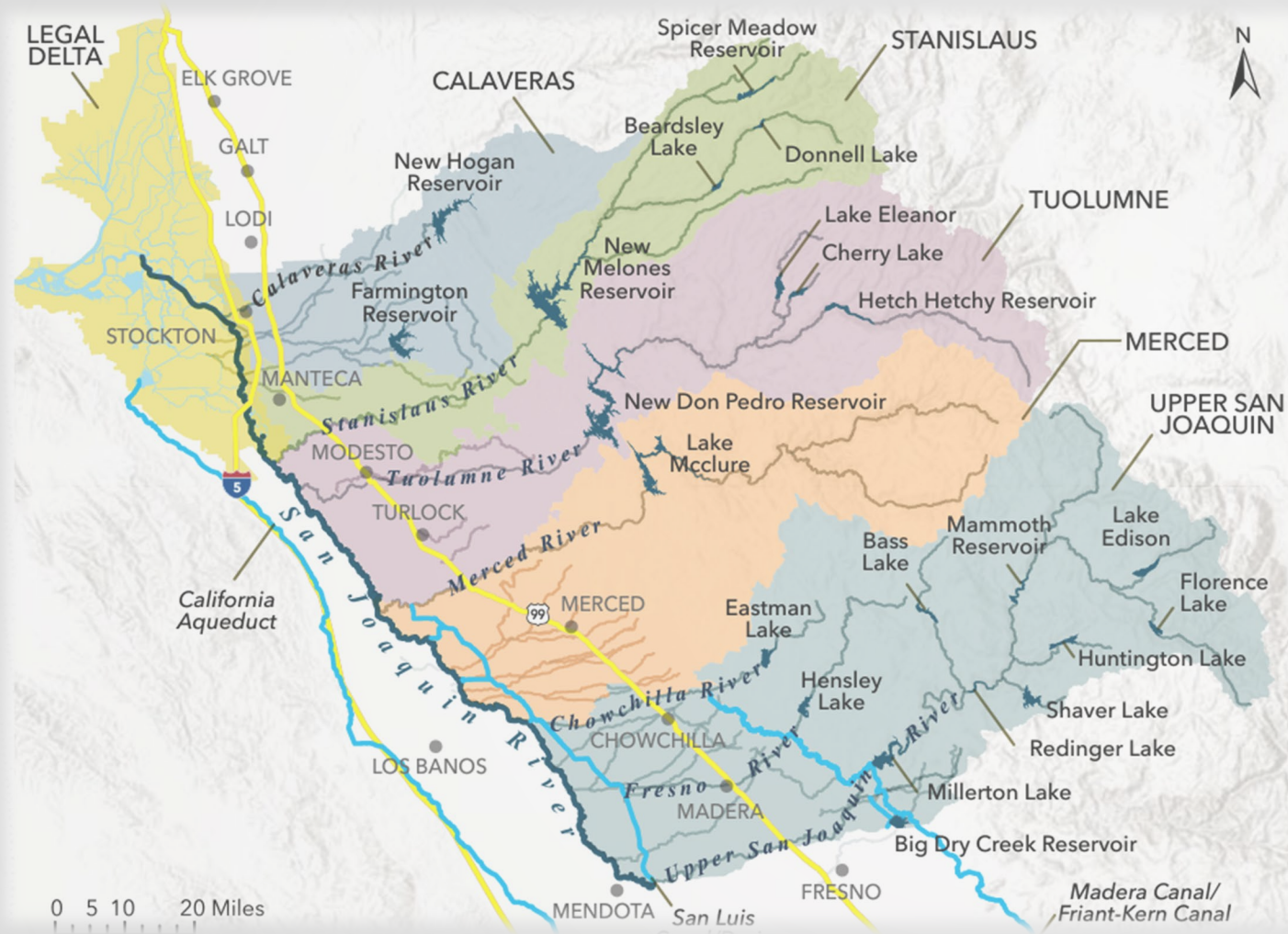
Statewide Infrastructure Investigations Branch  
CALIFORNIA DEPARTMENT OF WATER RESOURCES




Reports posted: <https://water.ca.gov/programs/all-programs/flood-mar>



# San Joaquin Basin Flood-MAR Watershed Studies



## Completion - June 2025

1. Analytical tools covering headwater to groundwater
2. Climate vulnerabilities for flood, surface and groundwater supply, and ecosystems
3. Flood-MAR Adaptation Strategies (including FIRO-MAR)



# Partners

Watershed	Groundwater Sub-basin	Local Partners	Regional Partners
Calaveras	Eastern San Joaquin	<ul style="list-style-type: none"> <li>• San Joaquin County Flood Control and Water Conservation District</li> <li>• Stockton East Water District</li> <li>• Calaveras County Water District</li> <li>• City of Stockton</li> <li>• San Joaquin Area Flood Control Agency</li> </ul>	<ul style="list-style-type: none"> <li>• US Bureau of Reclamation (USBR)</li> <li>• United States Army Corps of Engineers (USACE)</li> <li>• Center for Western Weather and Water Extremes (CW3E)</li> </ul>
Stanislaus River	Eastern San Joaquin & Modesto	<ul style="list-style-type: none"> <li>• Oakdale Irrigation District</li> <li>• South San Joaquin Irrigation District</li> <li>• Stockton East Water District</li> </ul>	
Tuolumne River	Modesto & Turlock	<ul style="list-style-type: none"> <li>• Turlock Irrigation District</li> <li>• Modesto Irrigation District</li> </ul>	
Merced River	Merced	<ul style="list-style-type: none"> <li>• Merced Irrigation District</li> </ul>	
Upper San Joaquin River	Madera & Chowchilla	<ul style="list-style-type: none"> <li>• Madera Irrigation District</li> <li>• Chowchilla Water District</li> <li>• Friant Water Authority</li> <li>• Pacific Gas and Electric</li> <li>• Southern California Edison</li> </ul>	

# Technical Support to Local Agencies

- Planning and Technical assistance on Flood-MAR projects.
- Technical assistance for temporary water rights applications for Flood-MAR projects
- Exploration of non-traditional recharge opportunities such as Multiple Benefit Floodplain Restoration (habitat and recharge)



# Guidance and Outreach

- Flood-MAR White Paper
- Flood-MAR Research Advisory Committee (RAC), a multidisciplinary group of subject matter experts across 13 research themes
- Flood-MAR Research and Data Development Plan
- Flood-MAR Network
  - Monthly lunch-MAR webinars
  - Public forums
  - Listening sessions
  - Flood-MAR hub – [www.floodmar.org](http://www.floodmar.org)





# Questions & Comments

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[www.water.ca.gov/Programs/All-Programs/Flood-MAR](http://www.water.ca.gov/Programs/All-Programs/Flood-MAR)

