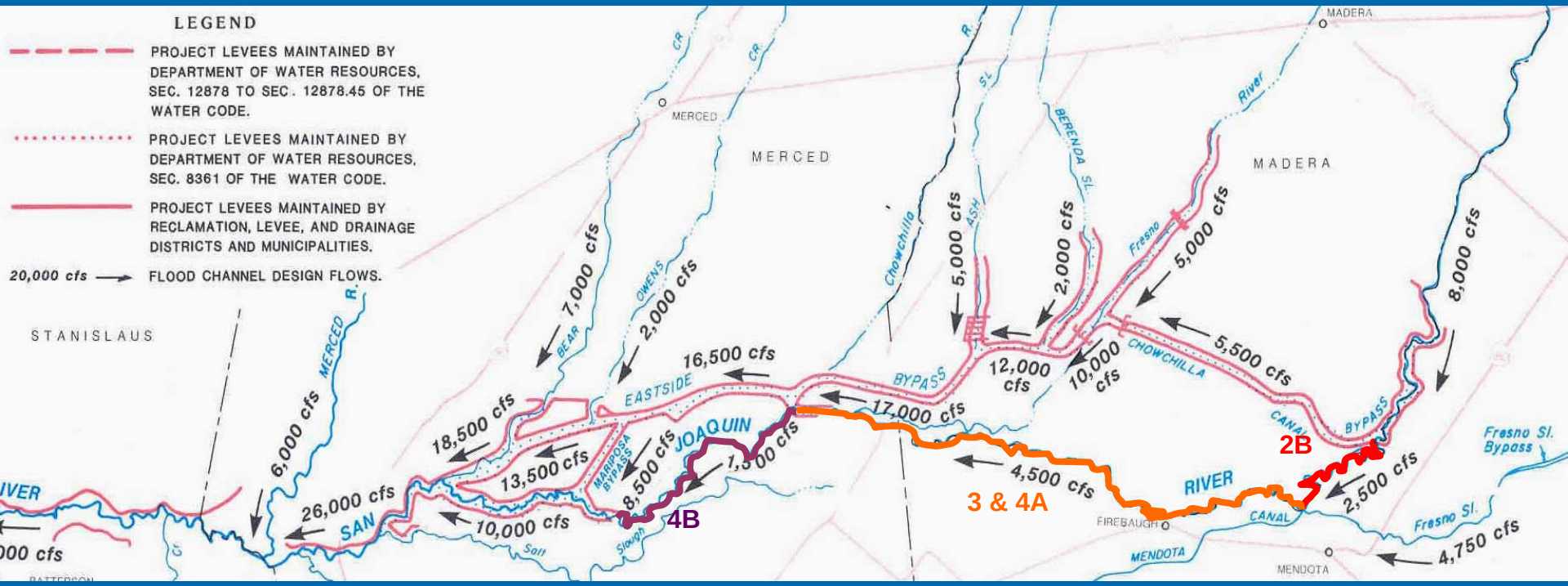
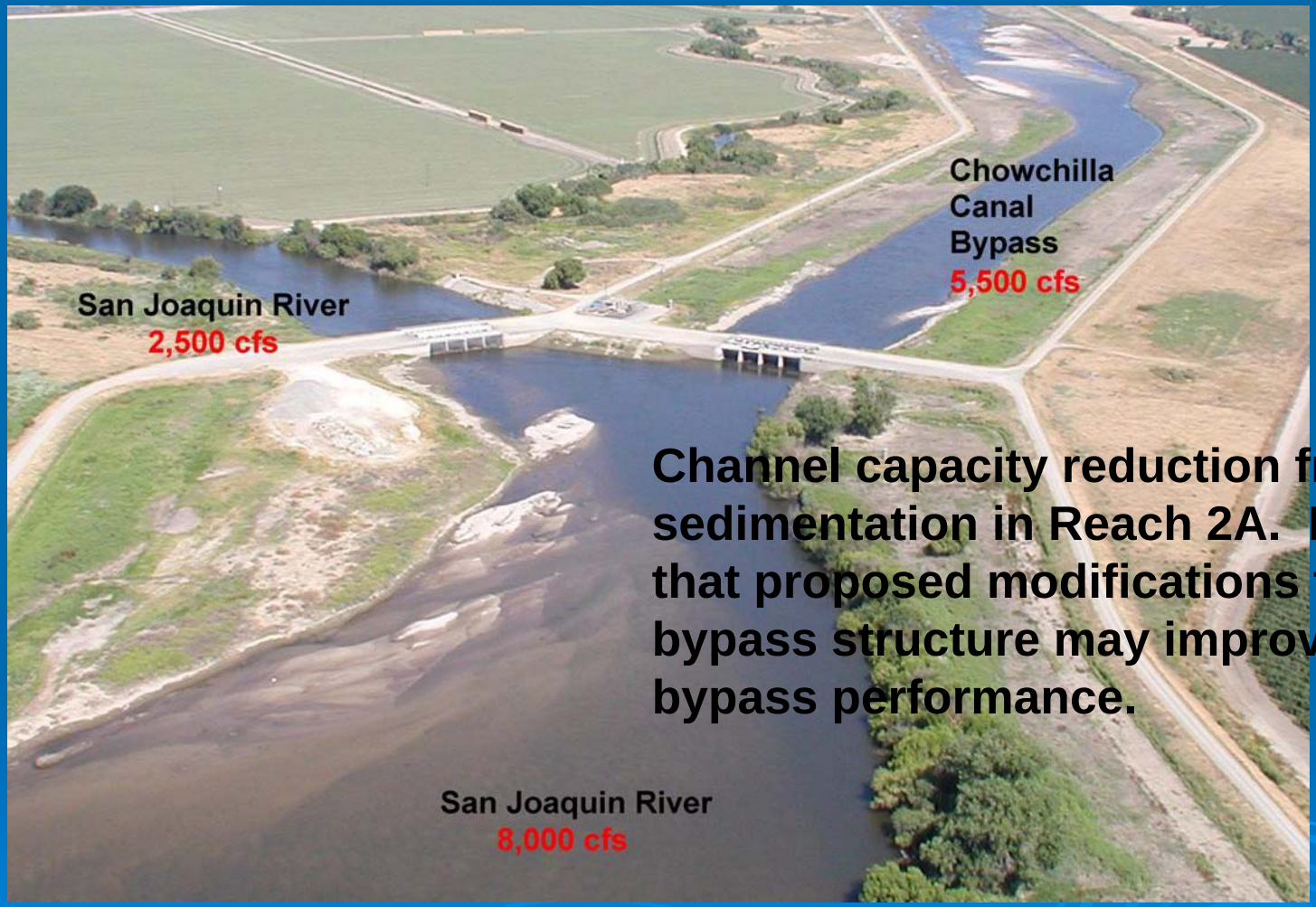
Design Flows, Channel Capacity and Restoration Flows



Restoration plans propose that all channels on the San Joaquin have a capacity of 4,500 cfs. This means increased flow capacity in Reaches 2B and 4B and evaluation of the design flow capacities in Reach 3 and 4A.

2 – Chowchilla Canal Bypass Control Structure
Capacity Operational Issue



Channel capacity reduction from sedimentation in Reach 2A. Note that proposed modifications to the bypass structure may improve bypass performance.

Limited capacity of the control structure requires that the pool upstream be held excessively high to divert higher flows into the bypass or river. This condition adds to the problem of the upstream levee instability. Capacity of the Chowchilla Canal Bypass control structure should be increased at least 50 percent.

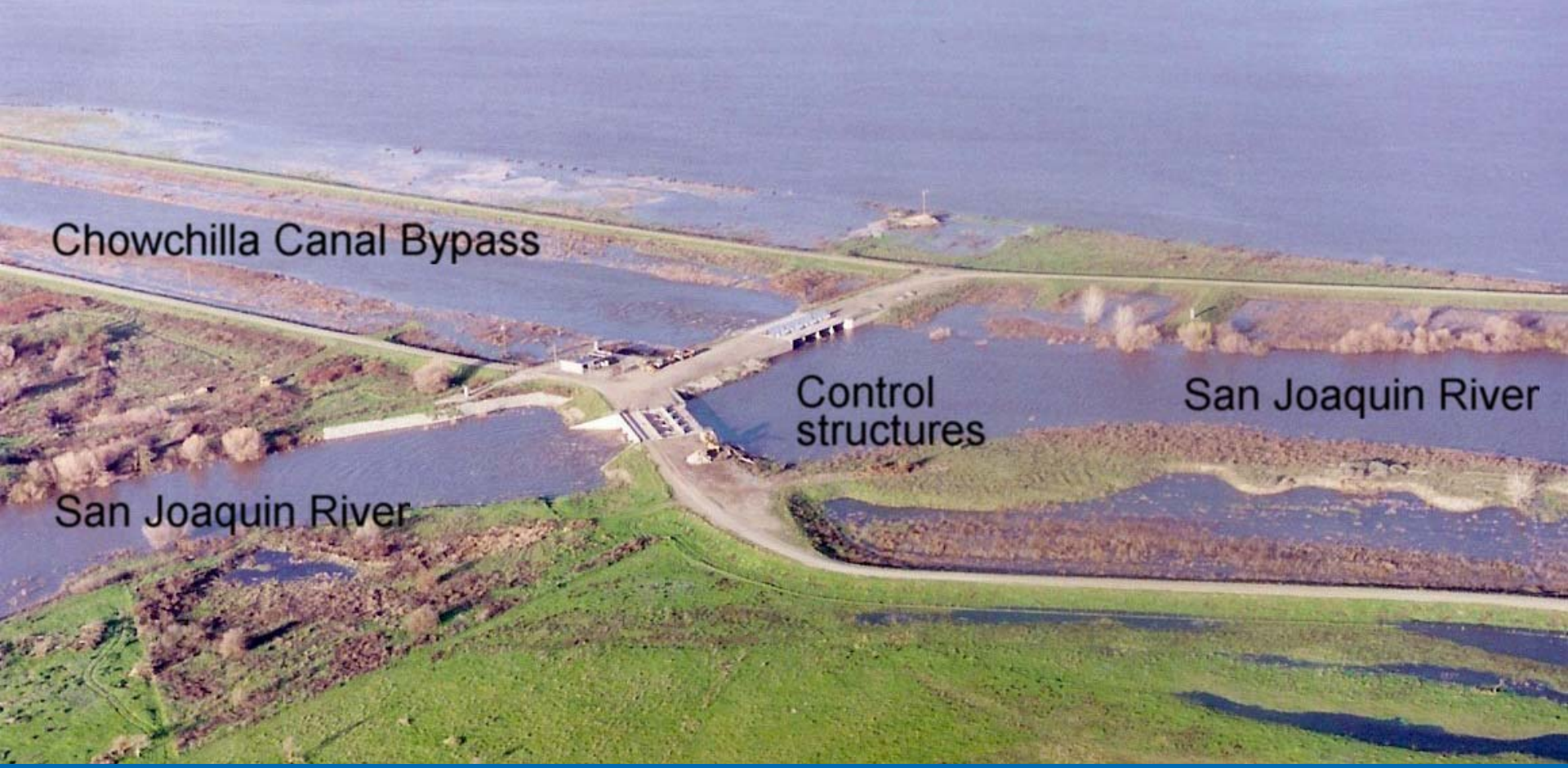


Illustration of impacts to adjacent land use from levee failure in Reach 2A. Floodwater at top out of channel flooding farmland.

Reach 2A – Flood water boiling through the levee 2006


collapsing stream bank in reach 3
Firebaugh


evidence of lateral earth cracking, proximity to structures in Reach 3
Firebaugh

Reach 2A – Levee erosion 2006


Vegetation encroachment reducing the capacity of the channel in Reach 4B.
Design capacity = 1,500 cfs.
Actual capacity = 400 cfs.


Vegetation encroachment reducing the capacity of the channel in Reach 4B.

Levee Evaluation Program

- 300 miles urban levees
- 1,600 miles project levees
- Funding Propositions 84 and 1E
- Factors
  - seepage
  - stability
  - settlement
  - erosion
  - seismic

Levee Evaluation Program

- DWR is committed to assisting local agencies in determining the best way to implement and fund needed repairs to their levees.
- Goal
  - 200 year protection in urban areas
  - Design level protection in rural areas
- Funds are not adequate for the entire state and they will be awarded on a competitive basis.

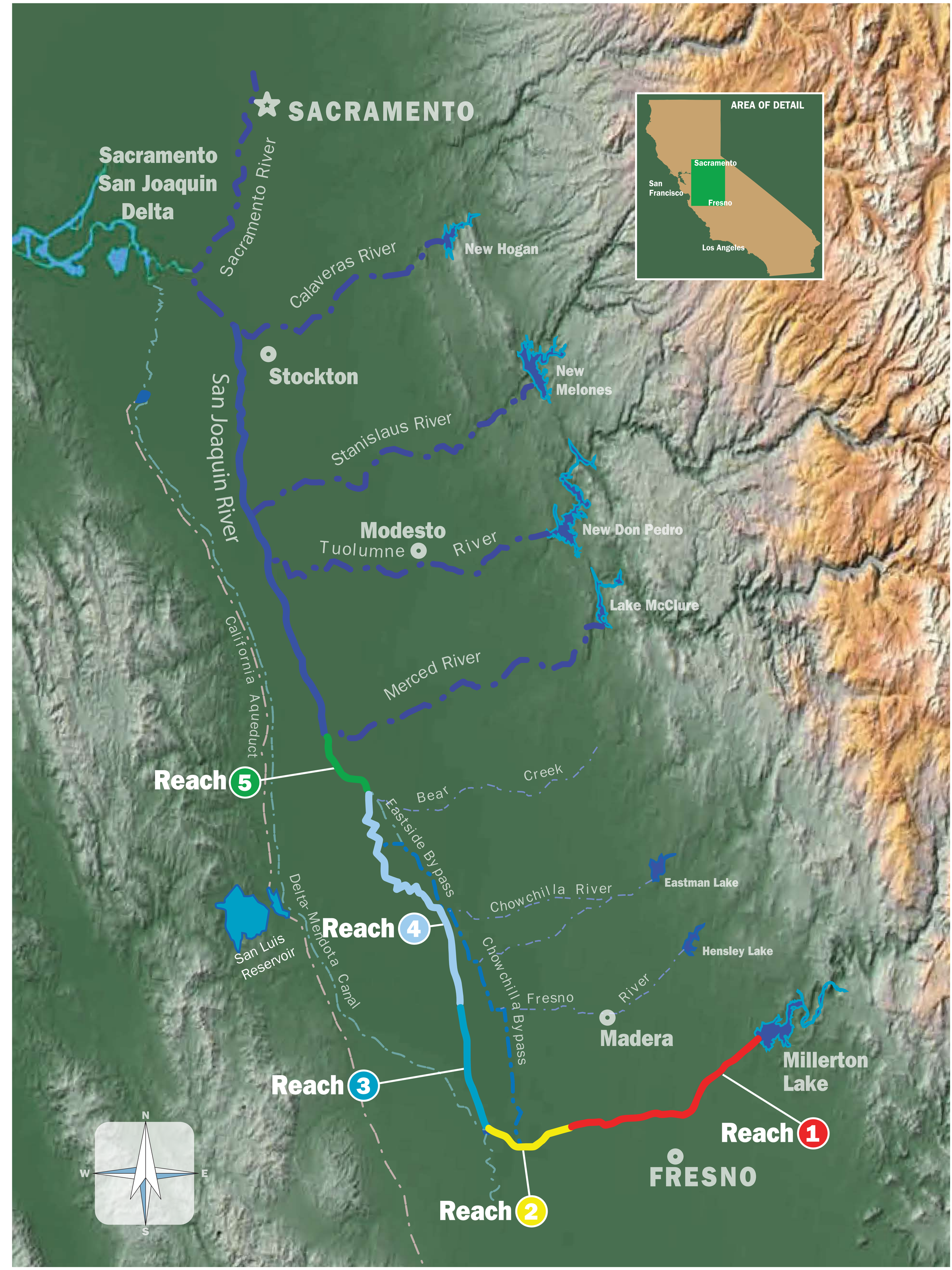
Coordination

- The SJRRP is working closely with DWR's Levee Evaluation Program.
- Working to:
  - leverage funds and staff
  - assure no duplication of effort
  - coordinate schedules
  - attain common goals

SAN JOAQUIN RIVER
RESTORATION PROGRAM

STATION 1

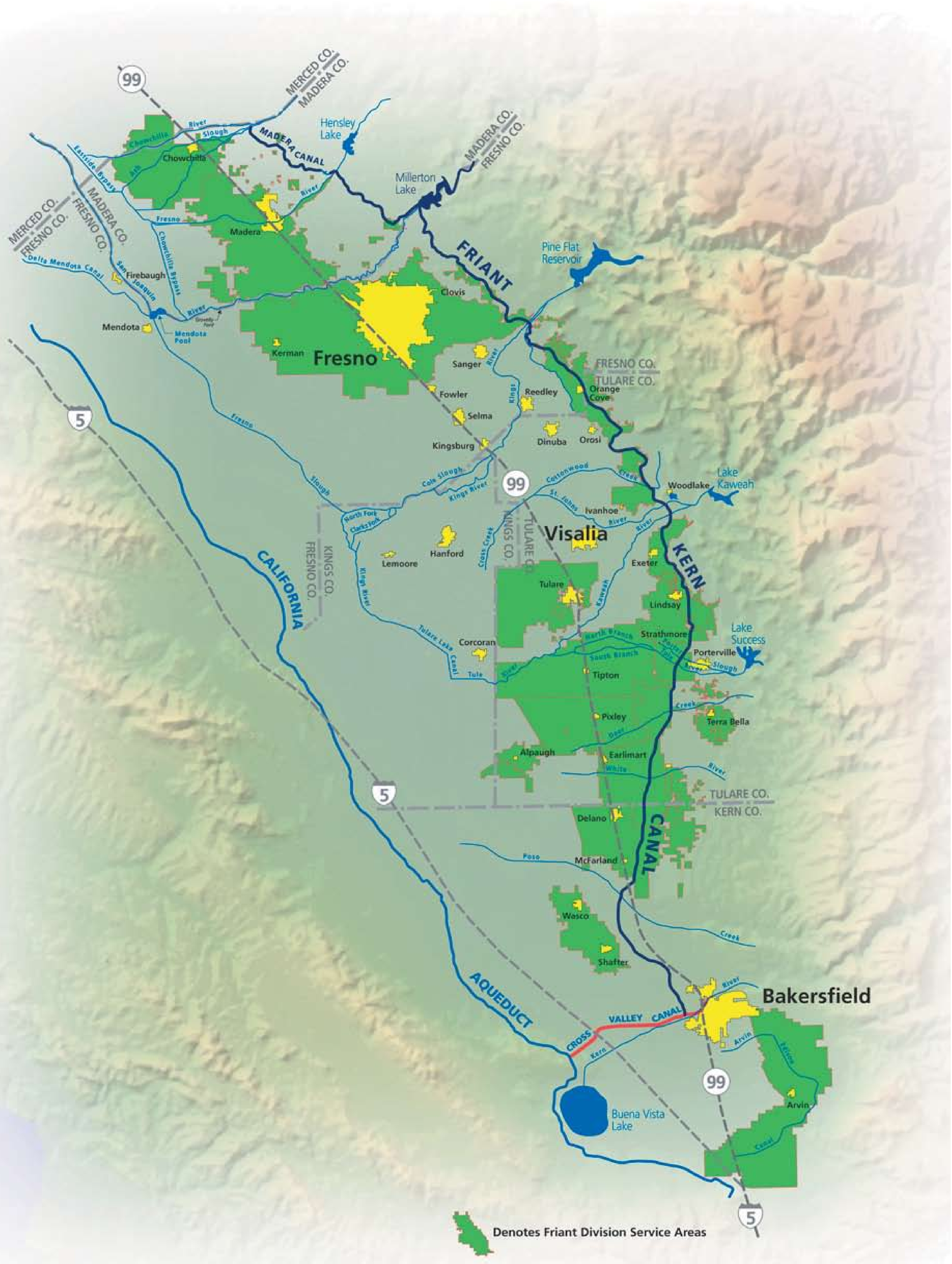
San Joaquin River



SAN JOAQUIN RIVER
RESTORATION PROGRAM

STATION 1

Friant Service Area



SAN JOAQUIN RIVER
RESTORATION PROGRAM

STATION 1

Process and Planning

The San Joaquin River Restoration Program's Two Goals

River/Fish Restoration Goal

To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.

Water Management Goal

To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

SAN JOAQUIN RIVER RESTORATION PROGRAM

STATION 1

Process and Planning

Environmental Review Purpose

Compliance activities associated with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) will:

- Evaluate reasonable **alternatives** that could reduce or avoid environmental impacts
- Provide **information** for **public review** and comment
- Identify significant **environmental impacts**
- Develop **mitigation** (ways to reduce or avoid environmental impacts)
- Disclose to **decision makers** the impacts, mitigation, and public comments

What is Scoping?

Scoping is the process of identifying what issues will be covered in the environmental reports and in what detail. The **Implementing Agencies** are defining the issues to be evaluated in the Draft PEIS/R and invite stakeholder and public input on environmental considerations as part of the scoping process.

Scoping helps to **identify** and **refine**:

- Potential options and alternatives
- Potential environmental impacts
- Potential mitigation measures

Program Document

Information and analysis for the SJRRP will be documented in a Draft and Final Program Environmental Impact Statement/Environmental Impact Report (PEIS/R) that will:

- Consider the SJRRP comprehensively and evaluate a range of alternatives to achieve the goals of the Settlement
- Focus on system-wide impacts
- Provide a basis for any site-specific environmental documents needed, to include environmental compliance documentation

SAN JOAQUIN RIVER RESTORATION PROGRAM

STATION 1

Environmental Issues & Potential Impacts

Hydrology and Flood Management

- Water Supply (surface and groundwater)
- Water Quality
- Flood Management

Biological Resources

- Fish and Aquatic Resources
- Terrestrial Vegetation and Wildlife Resources

Construction and Operation Impacts

- Noise and Vibration
- Dust and Air Quality

Land Use and Socioeconomics

- Agricultural Resources
- Recreation
- Social Issues and Environmental Justice
- Land Use, Planning and Zoning
- Socioeconomics
- Population and Housing
- Indian Trust Assets
- Cultural Resources

Infrastructure

- Transportation and Circulation
- Utilities and Public Services
- Hydropower Resources

Physical Resources

- Aesthetics
- Geology and Soils
- Toxic and Hazardous Materials
- Energy Resources

Cumulative Effects

SAN JOAQUIN RIVER RESTORATION PROGRAM

STATION 1

Environmental Review Process and Timeline

October 2006 | August 2007 | 2008 | 2009 | 2010 - 2025

STIPULATION OF SETTLEMENT

Team Organization

Scoping

Planning, Coordinating, Permitting
National Environmental Policy Act (NEPA)
California Environmental Quality Act (CEQA)

- River Modifications*
- Fish Introduction*
- Water Management*

Program-Level NEPA/CEQA Process

OPTIONS & ALTERNATIVES

INITIAL ALTERNATIVES
- Water Management
- Fisheries Management
- Flood Management

Evaluation

Preferred Alternative

Record of Decision

CEQA Findings, Notice of Determination

ENVIRONMENTAL EVALUATION & IMPACT ANALYSIS

Draft Program EIS/R

Final Program EIS/R

ONGOING PUBLIC INVOLVEMENT & COMMENTS

Please visit **www.restoresjr.com**

FORMAL PUBLIC REVIEW & COMMENT OPPORTUNITIES

Scoping

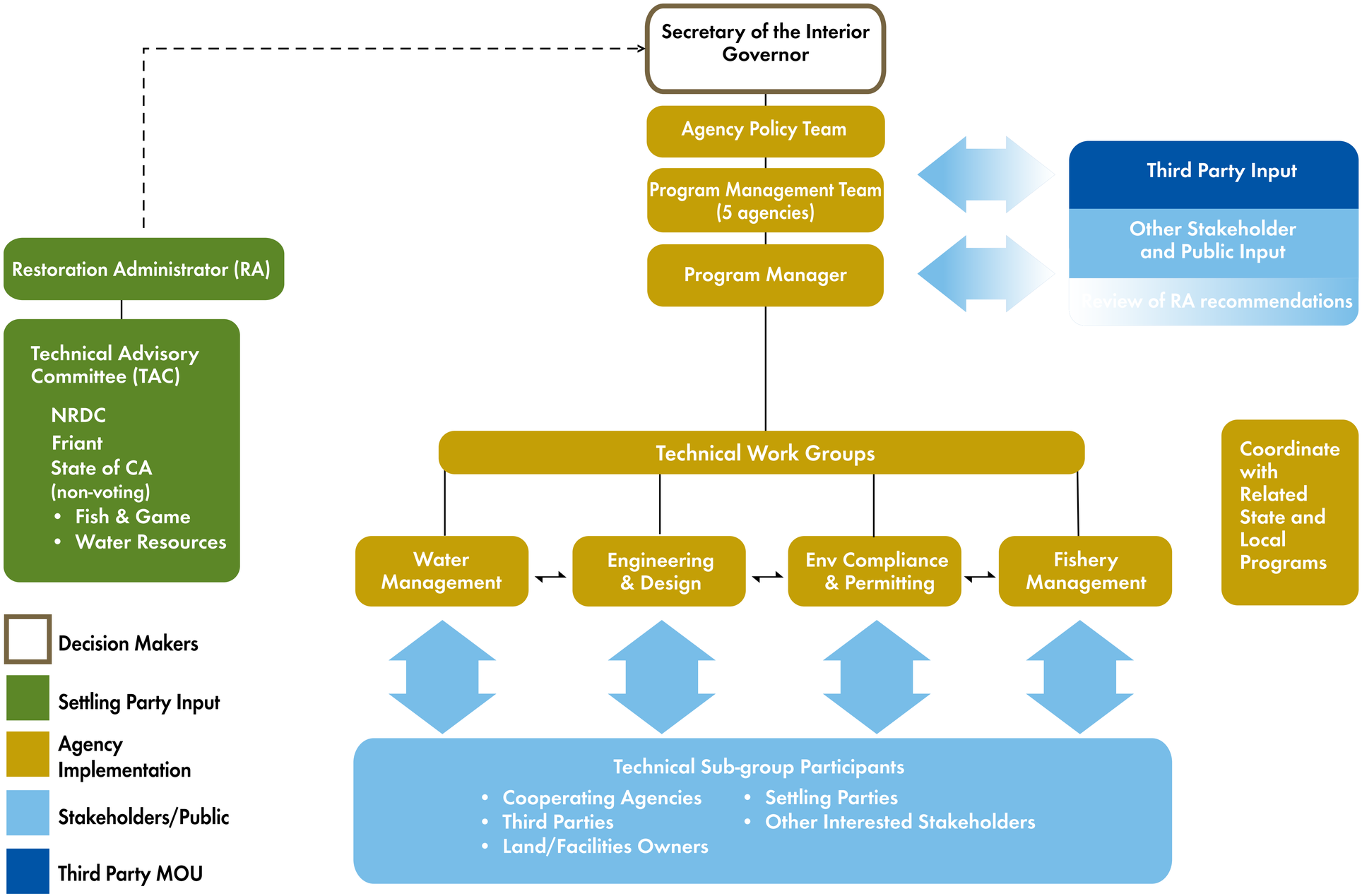
Draft Program EIS/R

*Prior to implementing subsequent actions identified in the SJRRP Program EIS/R, detailed, project-level environmental documents will be developed, if necessary.

SAN JOAQUIN RIVER RESTORATION PROGRAM

STATION 1

SJRRP Organization Chart



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SAN JOAQUIN RIVER
RESTORATION PROGRAM

STATION 2

FISH RESTORATION

Restoration Goal from the Settlement

“To restore and maintain fish populations in good conditions in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.”

-Natural Resources Defense Council v. Kirk Rodgers, as Regional Director of the United States Bureau of Reclamation, *et al*.

How do we accomplish the goal?

Mendota Dam

Sacramento Basin Spring-Run Chinook Salmon

San Joaquin River below Gravelly Ford

Channel Improvements

Evaluation of projects and options including those identified in Paragraph 11 of the Settlement to enable flow conveyance, fish passage and habitat improvements in the River:

- Gravel pits
- Reach 2B channel expansion
- Arroyo Canal screens
- Reach 4B flow strategy
- Mud & Salt slough barriers
- Bifurcation structure
- Mendota Pool bypass channel
- Sack Dam fish passage
- Sand Slough control structure
- Additional improvements

Key dates identified in the Settlement:

Phase 1 Channel improvements by **December 2013**

Phase 2 Channel improvements by **December 2016**

Restoration Flows

In addition to channel and structural improvements, releases of water from Friant Dam to the confluence of the Merced River will be made to achieve the Restoration Goal. Interim Flows begin in Fall of 2009 but are limited to experimental purposes, and by channel capacity and construction activities. Full Restoration Flows will begin no later than January 2014.

Reintroduction of Salmon

The Restoration Goal includes the reintroduction of spring-run and fall-run Chinook salmon between Friant Dam and the confluence with the Merced River at the earliest practical date after commencement of sufficient flows and issuance of required permits.

Key Dates Identified in the Settlement:

2010 September	U.S. Fish & Wildlife Service (USFWS) submits an application for reintroduction of salmon to National Marine Fisheries Service (NMFS)
2012 April	NMFS issues a decision on application
2012 December	Reintroduce salmon