

**State Water Resources Control Board  
Central Valley Regional Water Quality  
Control Board**

**Joint Workshop on Salinity  
Issues in the Central Valley**

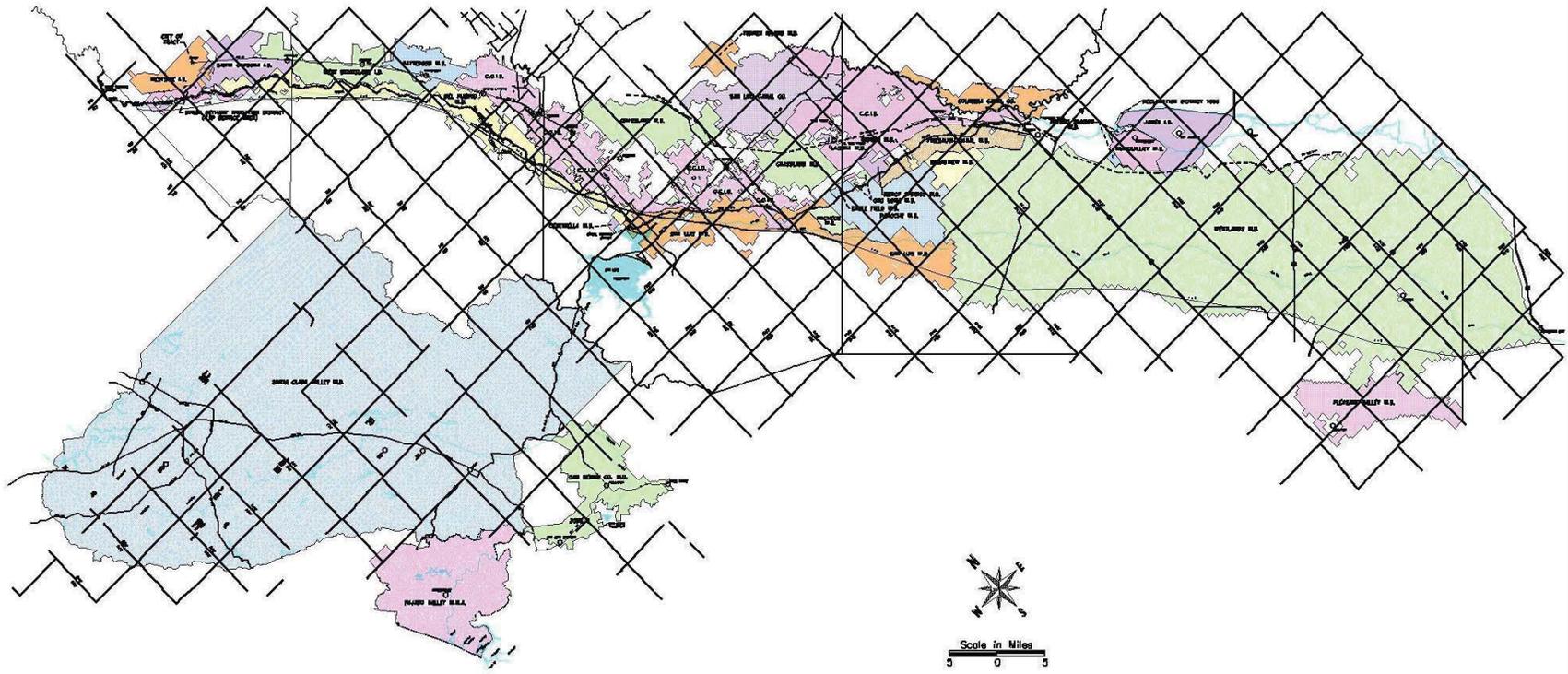
**January 31, 2006**

## **Comments on behalf of:**

- San Luis & Delta-Mendota Water Authority**
- San Joaquin Valley Drainage Authority**
- San Joaquin River Exchange Contractors Water Authority**
  - Grassland Basin Drainers**

## Joe McGahan

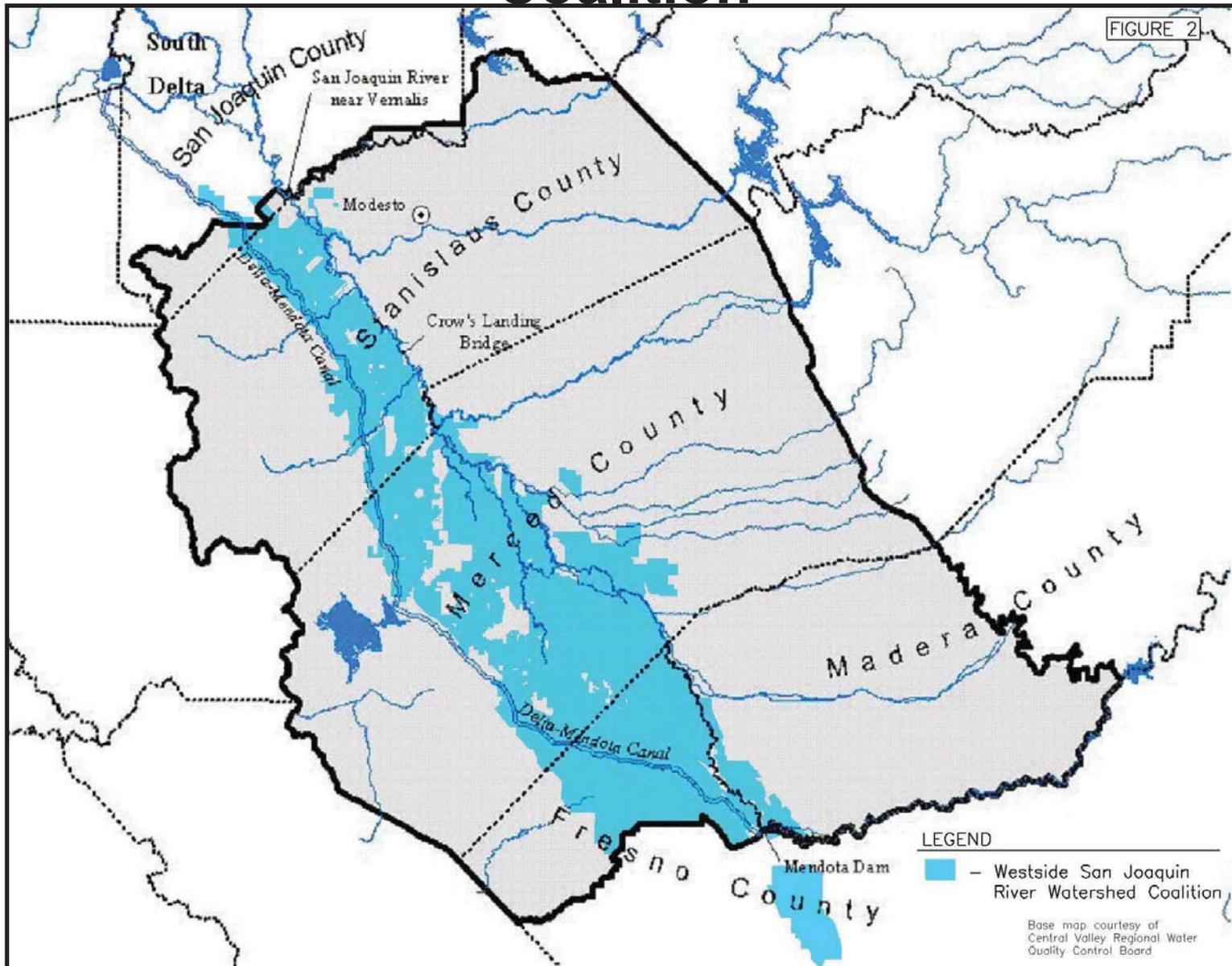
- Westside San Joaquin River Watershed Coalition
  - Grassland Bypass Project



**SAN LUIS & DELTA-MENDOTA WATER AUTHORITY**  
Member Agencies



# Westside San Joaquin River Watershed Coalition

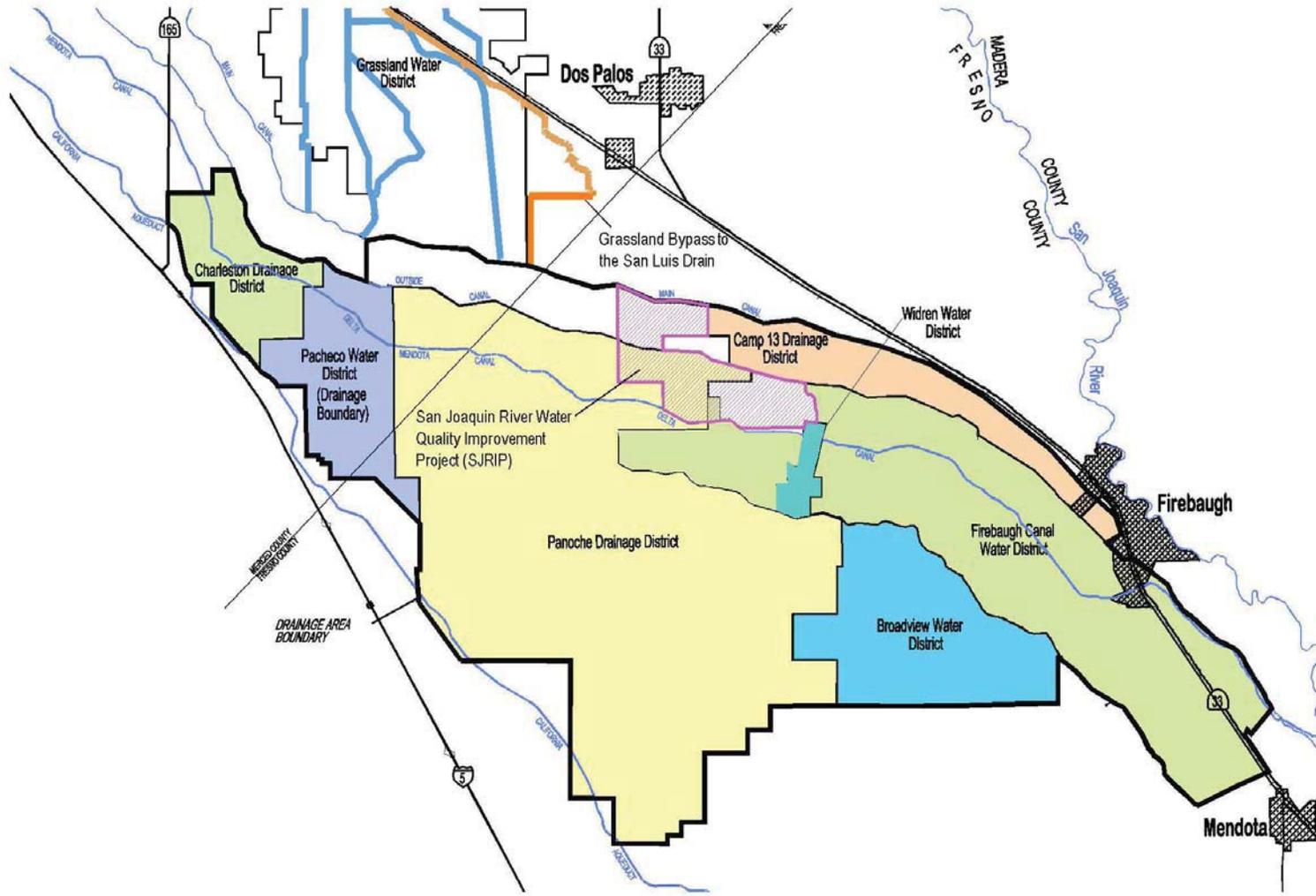


# Development of Best Management Practices on the West Side of the San Joaquin Valley

- \$40 million projects set to be completed within the next 4 years
- 39 different projects

Example projects:

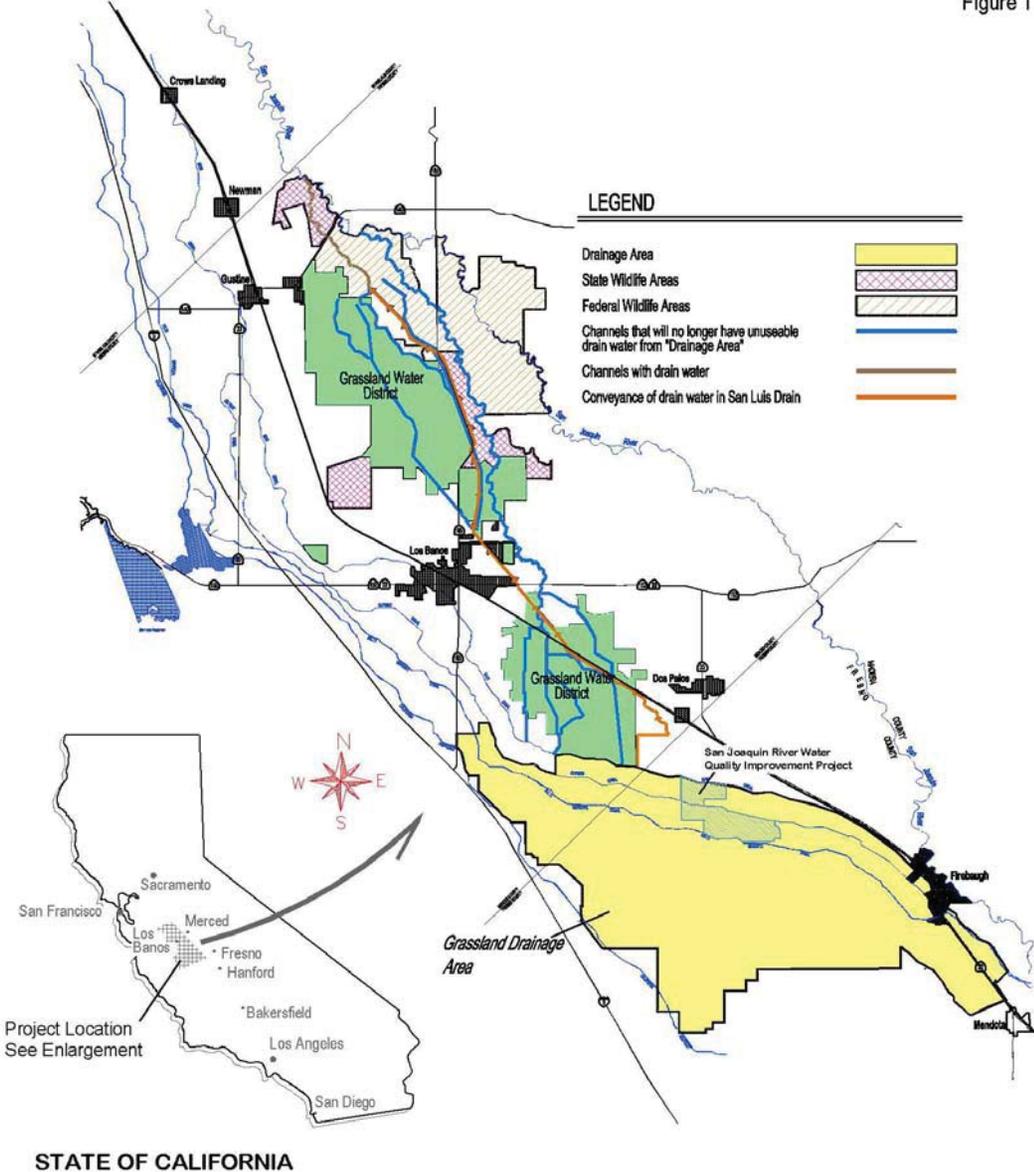
- Efficient Irrigation System Installation
- Pesticide and sediment BMP development
- Upstream dissolved oxygen studies
- Drainage treatment
- Reuse area infrastructure
- Panoche/Silver Creek watershed studies
- Tailwater return projects



**Grassland Drainage Area  
San Joaquin River Water Quality  
Improvement Project  
Location Map**

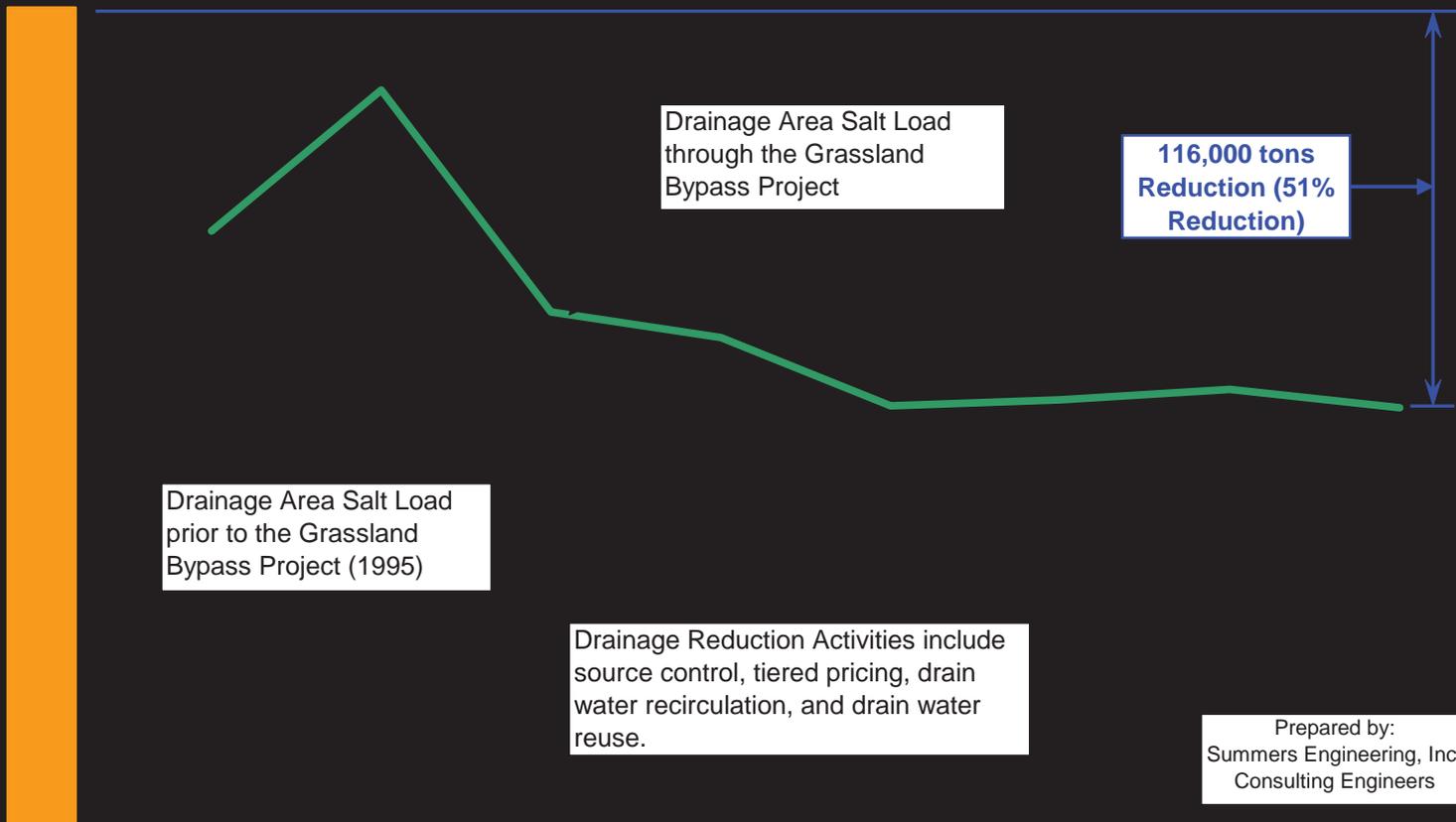
SUMMERS ENGINEERING, INC.  
Consulting Engineers  
HANFORD CALIFORNIA  
SEPTEMBER 2003

Figure 1



**Grassland Drainage Area  
Location Map**

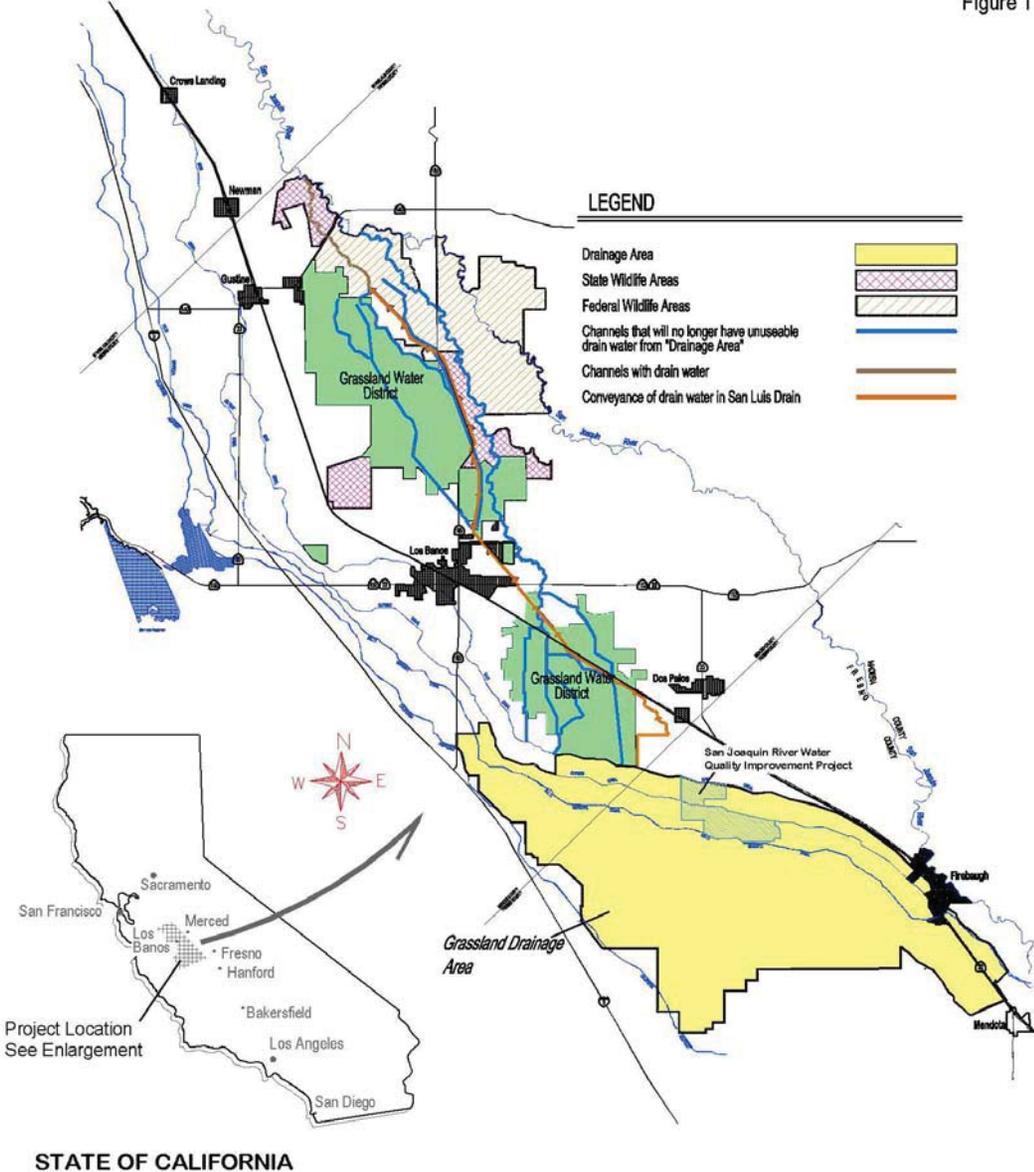
SUMMERS ENGINEERING, INC.  
Consulting Engineers  
HANFORD CALIFORNIA  
NOVEMBER 2003



Dennis Falaschi – General Manager  
Panoche Drainage District

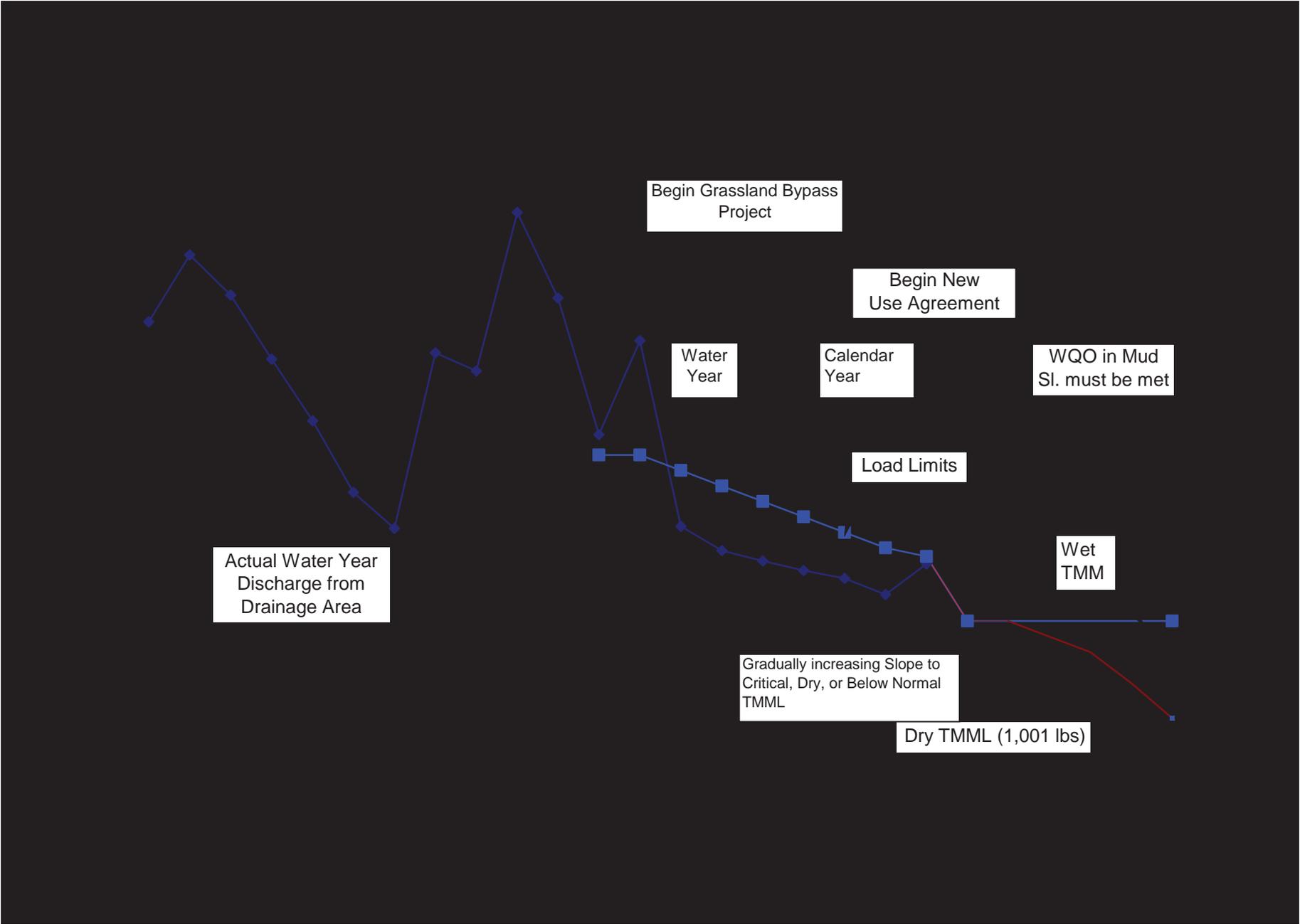
- Background and SJRIP Drainage Reuse Project

Figure 1



Grassland Drainage Area  
Location Map

SUMMERS ENGINEERING, INC.  
Consulting Engineers  
HANFORD CALIFORNIA  
NOVEMBER 2003



Actual Water Year  
Discharge from  
Drainage Area

Begin Grassland Bypass  
Project

Begin New  
Use Agreement

Water  
Year

Calendar  
Year

WQO in Mud  
Sl. must be met

Load Limits

Wet  
TMM

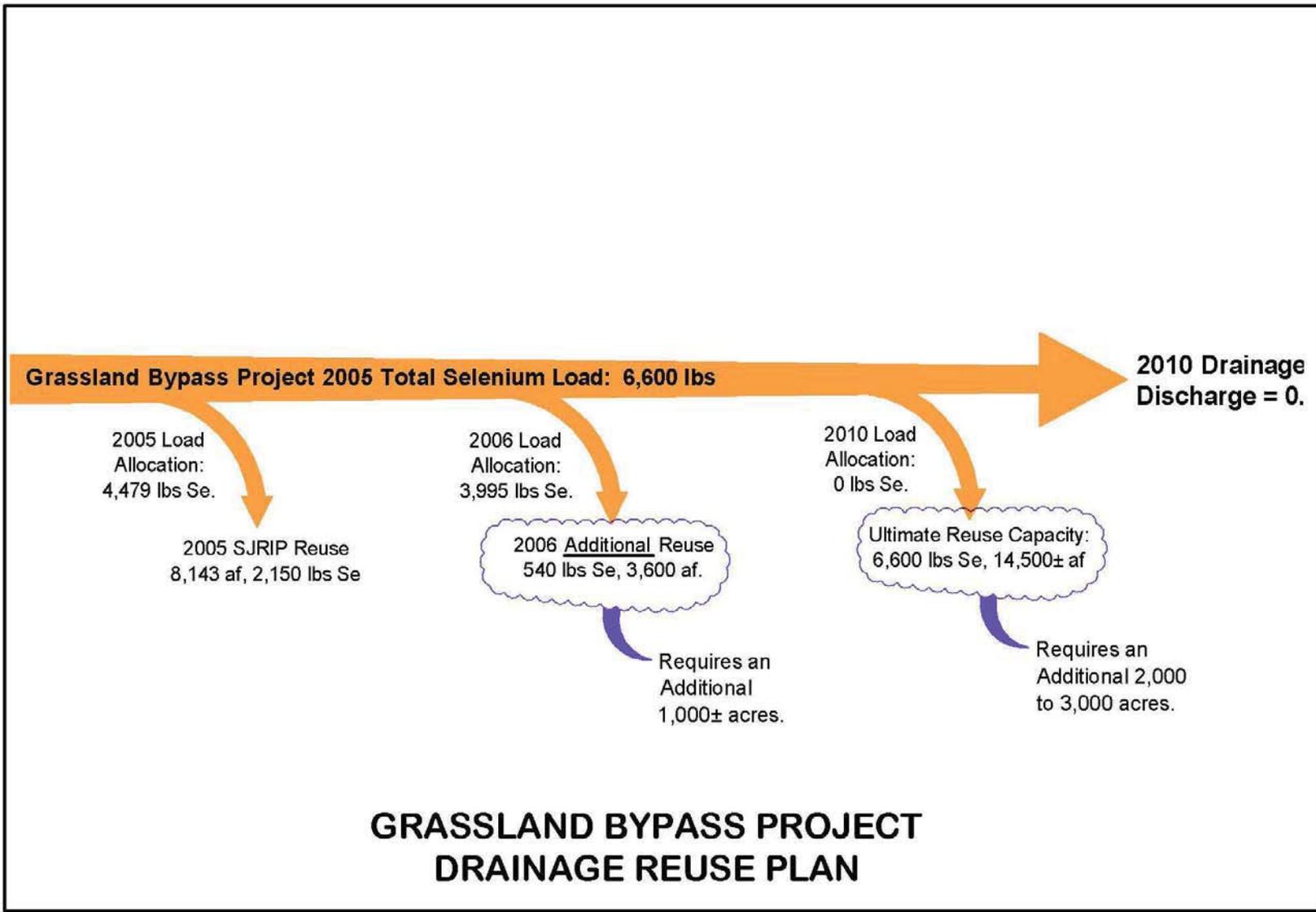
Gradually increasing Slope to  
Critical, Dry, or Below Normal  
TMMML

Dry TMMML (1,001 lbs)

# **Drainage Plan to Achieve Reductions**

## **Accomplished through:**

- **Reuse of drain water**
- **Source Control**
- **Recirculation of drain water**
- **Treatment of drain water**
- **Groundwater Pumping** (following presentation)



# Drainage Reuse

- **Current Project – San Joaquin River Improvement Project (SJRIP)**
  - 3,500 acres of salt tolerant crops
  - Reuse 8,100 af of drain water in 2005
  - Future expansion to about 6,000 acres
  - This provides immediate drainage relief while other projects are being implemented



Jose Tall Wheatgrass



Sunflowers

# Source Control

- **Facility Improvements:** Canal lining and piping
- **Irrigation Improvements:**
  1. **Keep pre-irrigation to an absolute minimum (preferably less than 6")**
  2. **Improve irrigation systems**
    - Shorter water runs
    - Drip irrigation
    - Avoid over-watering
  3. **Tailwater Return Systems**



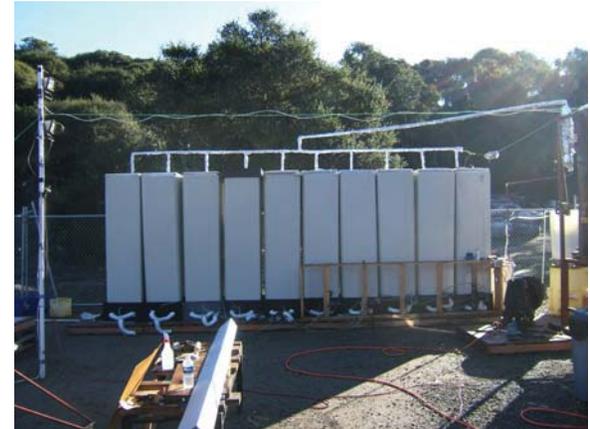
# Drainage Recirculation

- All participating districts have implemented recycling



# Drainage Treatment

- **Ultimate disposal for salt**
- **Currently in development**
  - Reverse Osmosis (RO) treatment and salt crystallization that will produce a clean water stream and a dry waste product.
- **Pilot Plant planned for this spring**

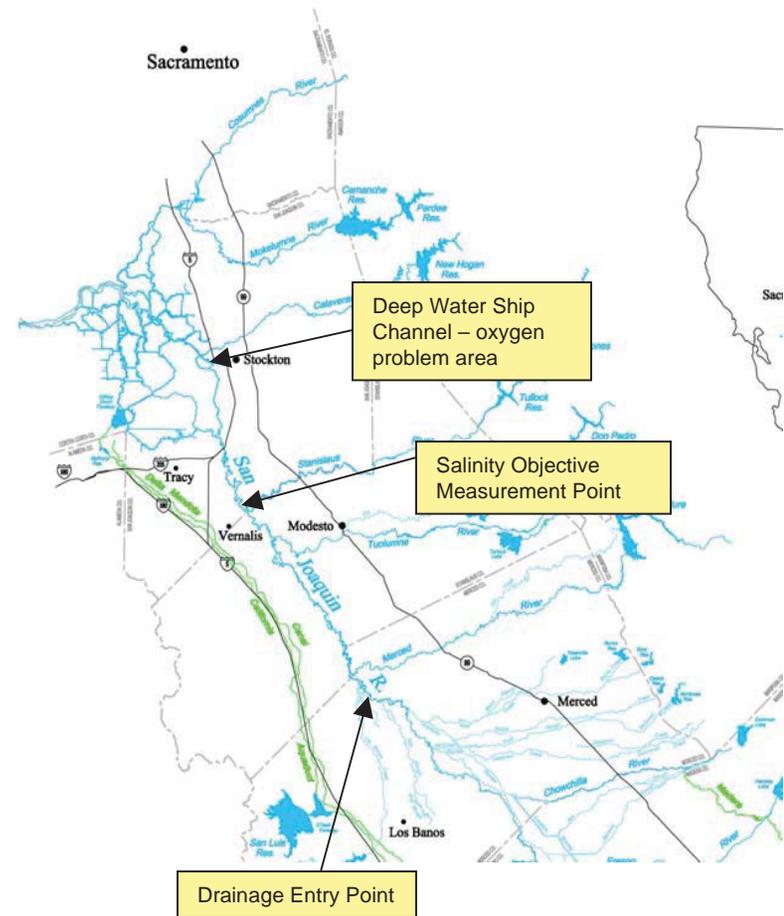


Chris White – General Manager, Central  
California Irrigation District

- Development of Westside Regional  
Drainage Plan

# San Joaquin River Water Quality Issues and Drainage Plan Benefits

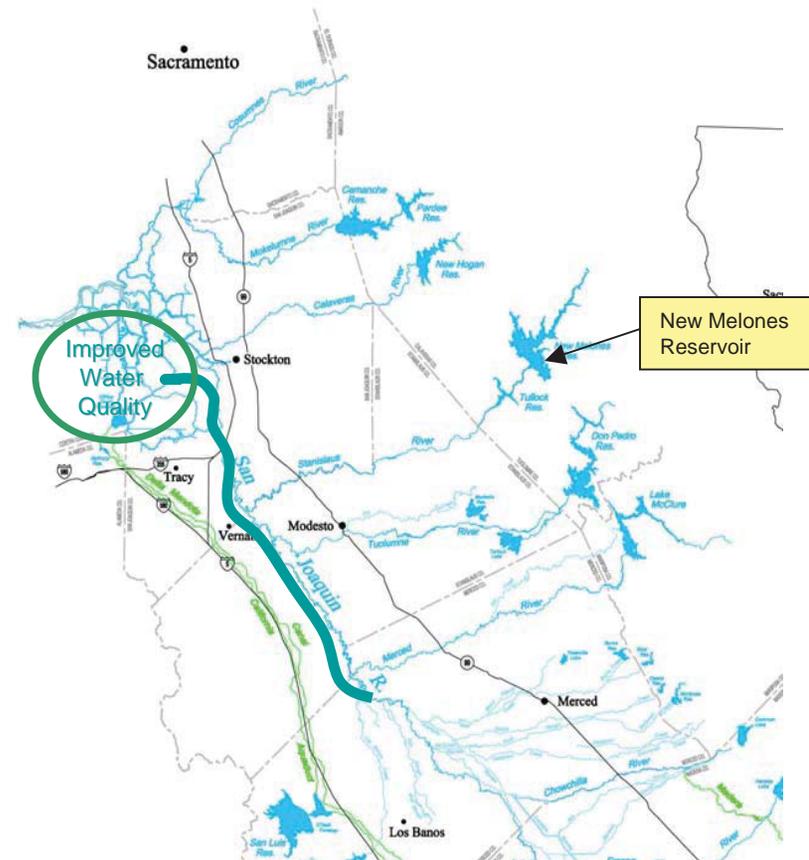
- San Joaquin River an Impaired Water Body under Clean Water Act
- Total Maximum Daily Load (TMDLs) adopted to address violations
  - Salinity: Restrict loads of salt
  - Dissolved oxygen: Restrict loads of oxygen demand, address flows and ship channel
- USBR Responsibility at Vernalis for Salinity

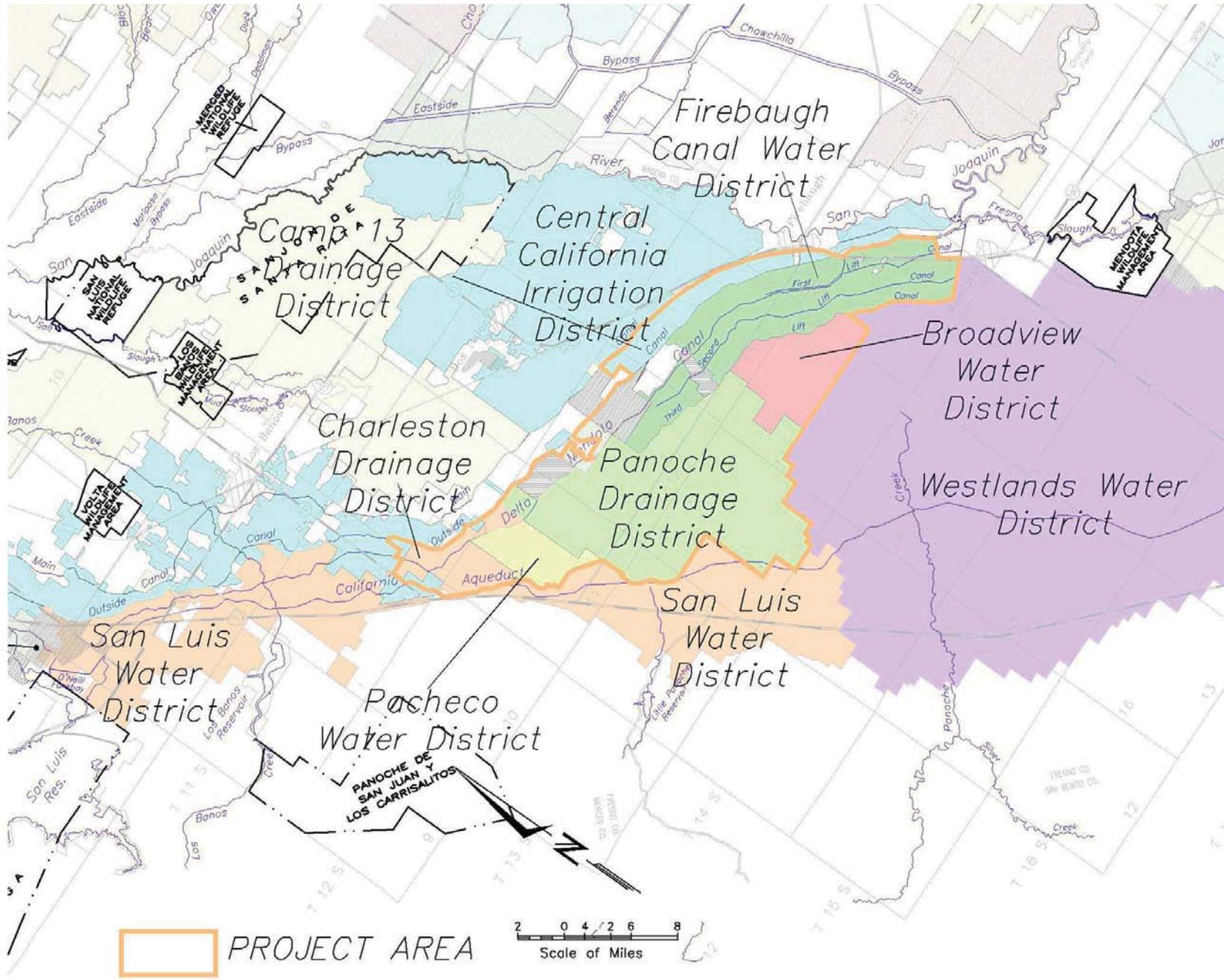


# San Joaquin River Water Quality Issues and Drainage Plan Benefits (continued)

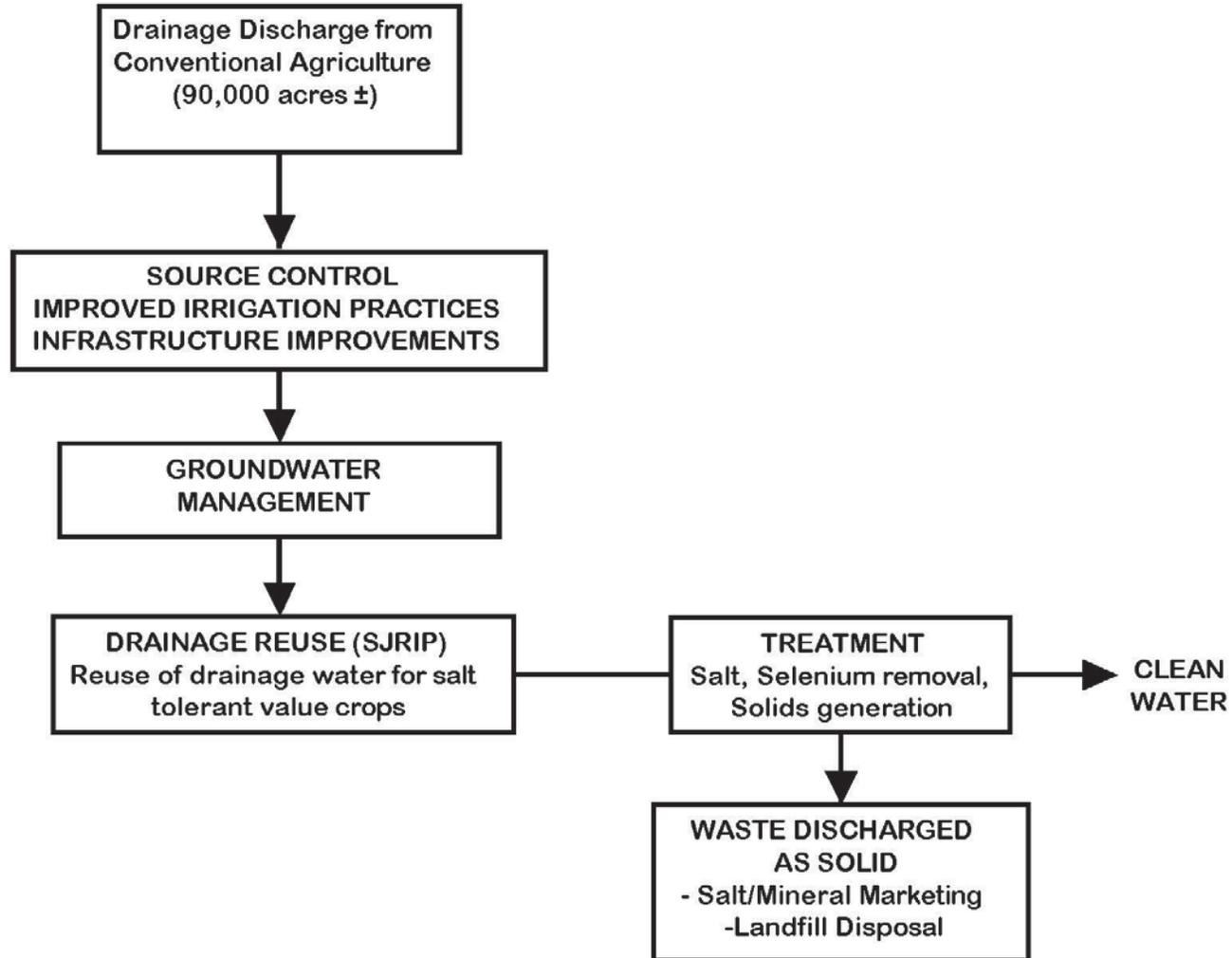
- Benefits of Plan

- Improves water quality for lower San Joaquin and Delta
- Reduces salt loads to assist compliance with salinity objective at Vernalis at all times
- Lessens need for New Melones releases; increases storage for other uses
- Removes impediment to CALFED Delta Improvements Package
- Plan is consistent with the USBR San Luis Unit Drainage Feature Re-evaluation

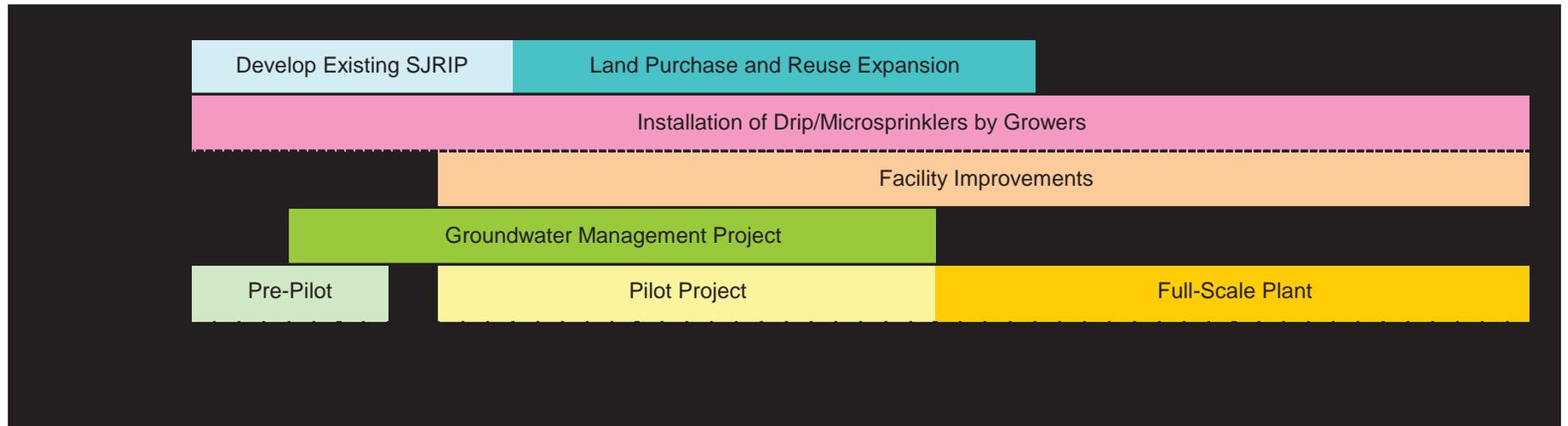




# Solution – Westside Regional Drainage Plan



# Project Timeline



# Westside Regional Drainage Plan Funding – to date

## Grassland Drainage Area Previous Funding for the In-Valley Drainage Solution

Project	Funding Source	Grant Funding	Loan Funding	District Funding	Total
Grassland Bypass Construction	SWRCB State Revolving Fund		\$ 600,000 *		\$ 600,000
Charleston D.D. Recirculation System	SWRCB State Revolving Fund		\$ 320,000 +		\$ 320,000
Charleston D.D. Recirculation System : CH-3	Charleston D.D.			\$ 71,200	\$ 71,200
Firebaugh Canal W.D. Recirculation Systems	Firebaugh Canal W.D.			\$ 271,100	\$ 271,100
Pacheco W.D. Drainwater Recirculation System	SWRCB State Revolving Fund		\$ 1,375,000 +		\$ 1,375,000
Panoche W.D. Drainwater Recirculation System	SWRCB State Revolving Fund		\$ 4,228,000 +		\$ 4,228,000
Pacheco W.D. Acquisition of Improved Irrigation Equipment	SWRCB State Revolving Fund		\$ 737,500 +		\$ 737,500
Panoche D.D. Acquisition of Improved Irrigation Equipment	SWRCB State Revolving Fund		\$ 4,997,294 *		\$ 4,997,294
Panoche D.D. Road Watering Project	Panoche D.D.			\$ 12,000	\$ 12,000
Westlands W.D. Acquisition and Retirement of Broadview W.D.	Westlands W.D.			\$ 27,000,000	\$ 27,000,000
<b>San Joaquin River Improvement Project (SJRIP)</b>					
Land Purchase & Initial Development	Prop 13 (DA)	\$ 17,500,000			\$ 17,500,000
2004-05 Development Project	USBR	\$ 904,100		\$ 95,900	\$ 1,000,000
Halophyte Development Project	USBR	\$ 290,000		\$ 15,000	\$ 305,000
Grassland Integrated Drainage Management Proj.	Prop 13	\$ 987,200		\$ 246,800	\$ 1,234,000
PE-5 Pump Station	Panoche D.D.			\$ 13,200	\$ 13,200
		<b>\$ 19,681,300</b>	<b>\$ 12,257,794</b>	<b>\$ 27,725,200</b>	<b>\$ 59,664,294</b>

\* Repaid by the District.

+ Repayment in Progress by District

•Includes \$27,000,000 for Broadview Purchase not included in written comments.

## Westside Regional Drainage Plan Funding – future funding needed to complete implementation

- \$20,820,000 Reuse Project Expansion
- \$1,320,000 Broadview Water District Reuse Project
- \$20,640,000 Irrigation Improvements
- \$10,790,000 Conveyance Facilities Improvements
- \$23,430,000 Treatment and Disposal
- \$3,000,000 Westlands Water District Groundwater Pumping
- \$12,000,000 Deep Groundwater Pumping

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\$92,000,000 Total