

POSO CREEK

Integrated Regional Water Management Plan



—ADOPTED JULY 2007—

Poso Creek IRWMP Regional Management Group and Region

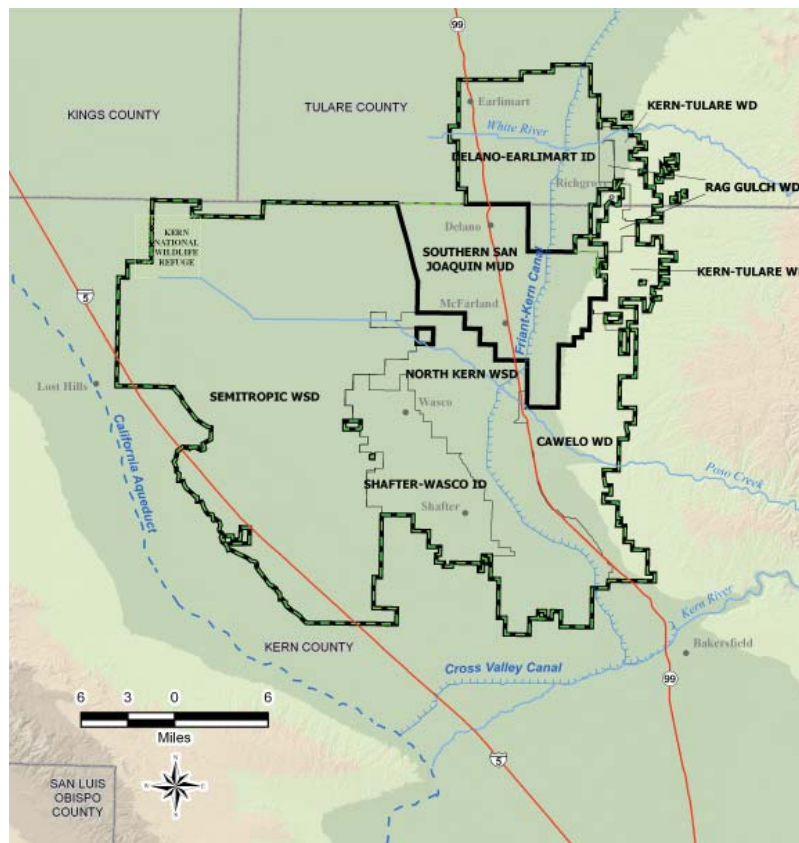
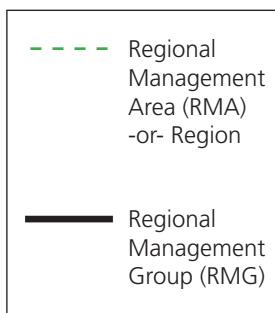
The Poso Creek Regional Management Group (Regional Management Group) comprises seven agricultural districts and one resource conservation district listed below.

- Semitropic Water Storage District – Lead Agency
- Cawelo Water District
- Delano-Earlimart Irrigation District
- Kern-Tulare Water District
- North Kern Water Storage District
- Rag Gulch Water District
- Shafter-Wasco Irrigation District
- North West Kern Resource Conservation District

The Regional Management Group adopted the Poso Creek Integrated Regional Water Management Plan (Poso Creek IRWMP) in July of 2007.

These districts overlie the groundwater basin in the Tulare Lake Basin Hydrologic area located in the northerly portion of Kern County and southerly portion of Tulare County. The Poso Creek IRWMP Region (Region) is a fertile agricultural area with a current annual gross value of agricultural commodities estimated at \$2 billion. The rich soils, climate, and irrigation water make it possible to grow predominately high-value, permanent crops. The largest value commodities – almonds, grapes, citrus, pistachios, and vegetables – are sold worldwide.

The Poso Creek IRWMP emphasizes resolving the Region’s short-term and long-term water supply challenges through an integrated water resource planning approach. The Poso Creek IRWMP includes development of regional water management strategies to address the Region’s needs and the framework for prioritizing and implementing them. The focus of the Regional Management Group is to improve water supplies throughout the Region.



Notes:

1. The boundary of the RMG and Region encompasses all of the area within the districts; however, to the extent that the NWKRC boundary includes area outside of the districts, the NWKRC boundary lines are not included.

2. For the purpose of evaluating water supplies, demands, and operations, Southern San Joaquin Municipal Utility District (SSJMU) was included with the RMG districts. This larger grouping is referred to throughout the IRWMP as the Regional Management Area (RMA) or Region.

Poso Creek IRWMP Region's Assets

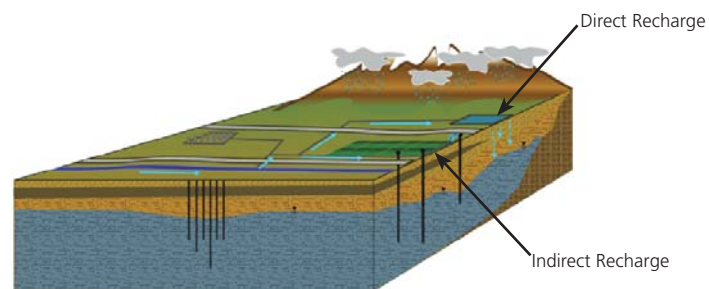
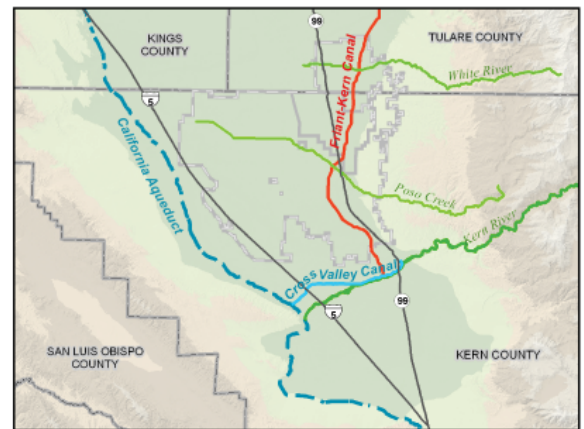
The Regional Management Group and stakeholders (listed on the last page of this brochure) share a common interest in managing the surface water and groundwater resources of the Region. They have operated segments of the groundwater basin conjunctively with available surface supplies for decades. The managed resources include water supplies from:

- State Water Project via the California Aqueduct
- Central Valley Project via the California Aqueduct
- Central Valley Project via the Friant-Kern Canal
- Kern River
- Poso Creek
- Common groundwater basin

The Region is located at the crossroads of the California Aqueduct, Friant-Kern Canal, and the Kern River. Thus, the potential for increased conjunctive use of surface water and groundwater supplies is a valuable asset to the Region.

Since California typically experiences either wet or dry years, the groundwater basin acts as a large regulating reservoir. The existing conjunctive use operation can be expanded by adding interconnections and promoting water supply exchanges between districts that allow for more flexibility in the Region's water supply. The Region's assets of federal, state, and local water supplies, dewatered groundwater storage, and significant irrigation demand make it an ideal location to regulate surface supplies conjunctively to the benefit of the agricultural based economy and the *economically-disadvantaged communities* of the Region and the state of California.

Water Supply, Conveyance, and Groundwater Storage



The proximity of the Regional Management Group to the California Aqueduct, Friant-Kern Canal, Kern River, Poso Creek and groundwater banking facilities, combined with large conveyance and absorptive capacity, provides an ideal setting for expanded conjunctive use operations.

The Region has large conjunctive use operations and significant groundwater storage capacity.

Challenges to the Region

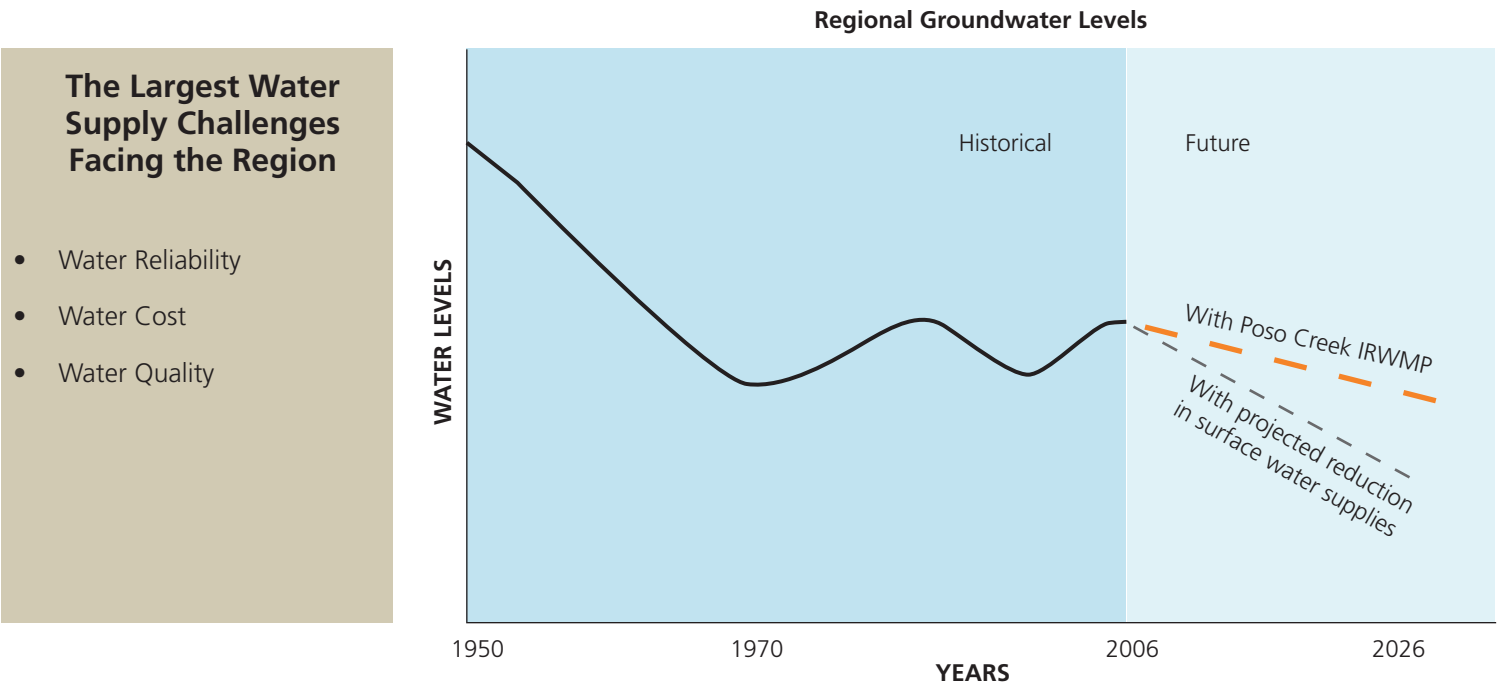
The accumulated effect of surface water supplies is reflected in the Region’s groundwater levels. As shown in the figure below, surface water supplies to the Region have generally stabilized groundwater levels since 1970. This relatively balanced condition would continue if deliveries of surface water supplies were to remain the same as recent historical amounts. However, the Region’s deliveries of surface water supplies are projected to decrease due to increased urbanization and environmental uses throughout the state.

Also shown illustratively in the figure are the effects of the projected reduction in deliveries of surface water supplies on regional groundwater levels. As pressure on surface supplies increases, it is apparent that the Region must make additional

use of its groundwater basin to regulate and absorb the available wet-year supplies. This increased conjunctive use operation will help maintain water reliability within the Region.

Since the Region produces crops for both local and world markets, to maintain its competitive role in the market place, the water supply must remain economical. Increased conjunctive use operations will help to maintain or enhance groundwater levels that support economically viable groundwater pumping lifts.

Groundwater quality in the Region is currently very good. Water banking and exchange activities will require water quality management and treatment to maintain that water quality.



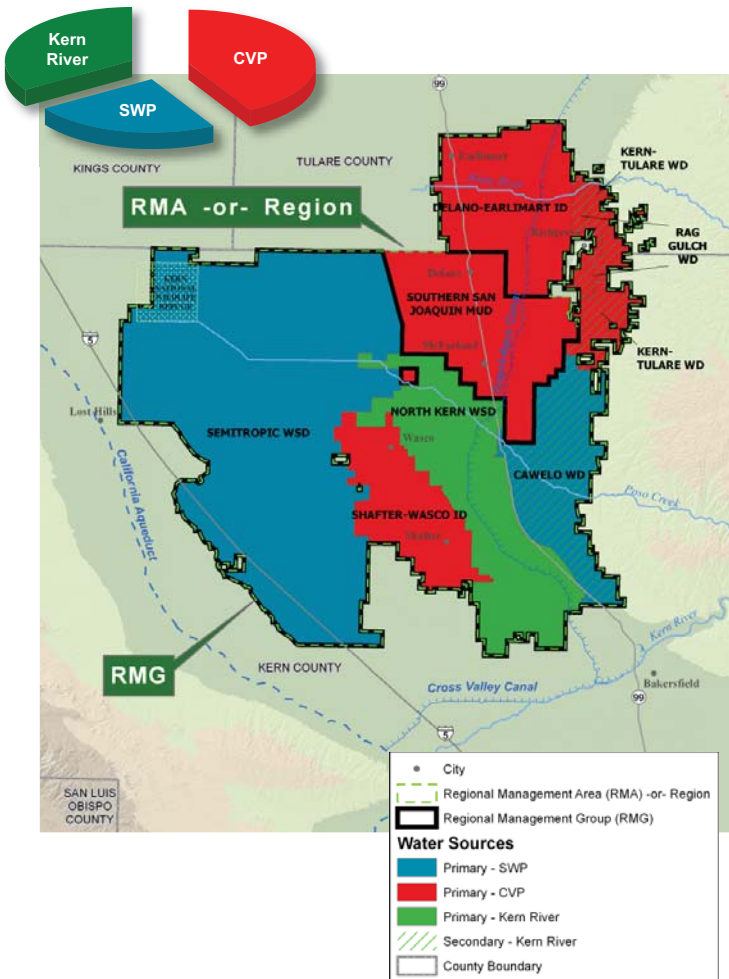
Regional Cooperation Will Provide A Solution

The sources of surface water supplies of the Region's individual districts' are shown on the map below. With the expected loss of historical surface water supply reliability, the Region must absorb wet-year water supplies in order to maintain a reliable and economical water supply. Wet-year water is available on short notice and not always at times when the water can be delivered for an irrigation demand. Therefore, it is important that the Region increase its ability to absorb surface water when available.

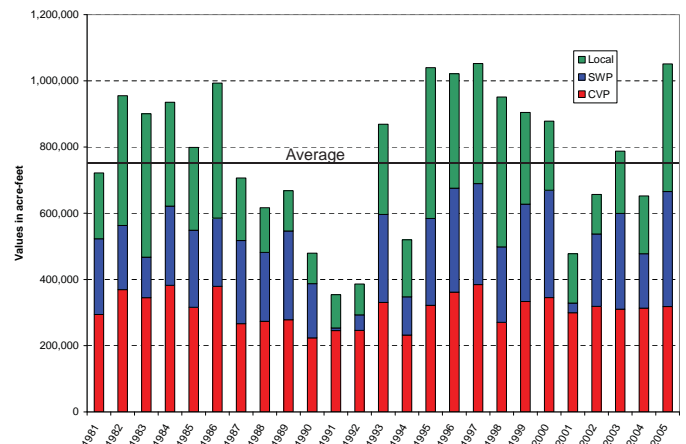
Because water is available to the Region from a number of sources which have differing hydrologic timing, integration of

these various water supplies, combined with conjunctive use of the groundwater basin, provides the Region with an opportunity to mitigate the projected loss to its water supplies.

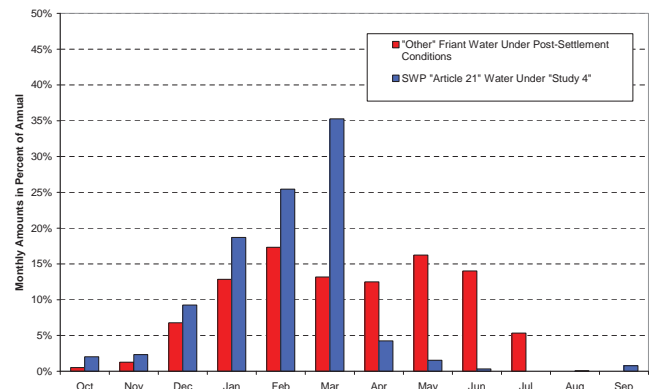
Regional cooperation will provide solutions for individual district needs by increasing operational flexibility. This can be accomplished by enhancing the existing conveyance systems within districts and establishing interconnections between districts. These conveyance enhancements will foster additional water delivery capability within the Region.



Historical Surface Water Supplies delivered to Poso Creek IRWMP Region during 1981-2005



Average Monthly Distribution of "Other" Friant Water Under Post-Settlement Conditions and SWP "Article 21" Water Under "Study 4"



Planning Objectives, Strategies and Water Management Measures

The RMG intends to implement non-structural and structural water resource management measures that support the Region's Planning Objectives and consider the State of California's state-wide priorities and the California Water Plan Update 2005 Resource Management Strategies.

The seven Planning Objectives which were identified for the Region are listed below. The more detailed operational objectives developed by the RMG during the plan formulation are included in Table ES-1 of the Plan.

- 1) Maintain and improve water supply reliability
- 2) Maintain groundwater levels at economically viable pumping lifts
- 3) Protect the quality of groundwater and enhance where practical
- 4) Maintain water supply costs at a level commensurate with the continued viability of the agricultural economy which has developed in the area
- 5) Enhance monitoring activities to meet groundwater levels and water quality goals
- 6) Maintain and/or enhance environmental resources within and outside of the study area
- 7) Enhance flood control in the study area

Planning objectives 1 through 5 were selected by the Regional Management Group based on a consensus reached during a pre-application meeting held on April 20, 2005. Subsequently, during the kick-off meeting for the Poso Creek IRWMP held on January 5, 2006, the Regional Management Group added planning objective 6, and, based on stakeholder input during monthly meetings held in 2006, planning objective 7 was added.

As Projects are implemented to meet the highest priorities for the Region, secondary benefits that each project may provide will be integrated into the *regional* solution. These benefits may include, flood control, ecosystem restoration, environmental and habitat protection and improvement, reduction in use of power and energy, water quality improvements, subsidence mitigation, and many others.

The Regional Management Group, with input from the stakeholders, has considered all of the Water Management Strategies listed in Table 2– Water Management Strategies of the IRWM Grant Program Guidelines. Most of these water management strategies are already practiced in this Region to some extent, as discussed in Chapter 6 of this Plan. Due to the overwhelming need to address water supply issues within the Region, the RMG prioritized water management strategies into the following two groups;

Highest Priority Strategies Considered for Project Implementation

- Groundwater management
- Water supply reliability
- Conjunctive management of surface water and groundwater
- Water transfers and exchanges
- Water quality protection and improvement

Strategies Considered for Project Integration¹

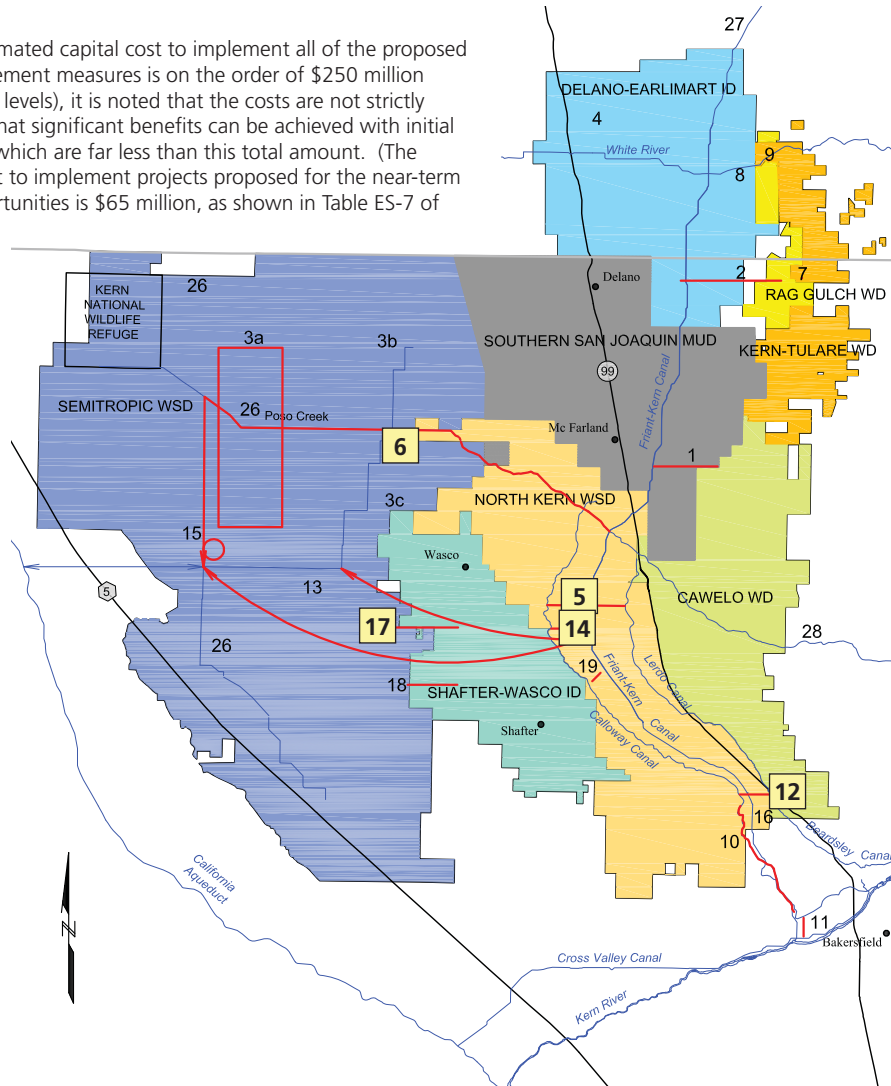
- Ecosystem restoration
- Environmental and habitat protection and improvement
- Flood management
- Imported water
- Land use planning
- NPS pollution control
- Recreation and public access
- Storm water capture and management
- Surface storage
- Water conservation
- Water recycling
- Water and wastewater treatment
- Watershed planning
- Wetlands enhancement and creation

The Regional Management Group formulated and prioritized projects to implement, consisting of the non-structural and structural water management measures listed on the opposite page. Locations of the proposed structural measures are shown on the map. The projects that are proposed for near-term funding proposals are highlighted. Implementation of these projects will occur in phases as funding opportunities are secured to match local contributions.

¹ Due to the location of the Region, desalination is the only water management strategy not under consideration for the Region.

Proposed Non-Structural and Structural Water Management Measures

While the estimated capital cost to implement all of the proposed water management measures is on the order of \$250 million (at 2007 price levels), it is noted that the costs are not strictly additive and that significant benefits can be achieved with initial expenditures which are far less than this total amount. (The estimated cost to implement projects proposed for the near-term funding opportunities is \$65 million, as shown in Table ES-7 of the Plan.)



STRUCTURAL PROJECTS (LOCATIONS SHOWN ON MAP)

Expand In-Lieu Service Areas

- 1 Connect Friant-Kern Canal Turnout to Cawelo's North System
- 2 Ninth Avenue Pipeline
- 3a Stored Water Recovery Unit (SWRU) In-Lieu Service Areas
- 3b Expand P-1030 In-Lieu Service Area
- 3c P-565 New In-Lieu Service Area

Expand Direct Recharge

- 4 G-W Banking North of DEID with Pixley ID
- 5 G-W Banking Conveyance Improvements to North Kern Recharge and Recovery Facilities
- 6 Pond Poso Spreading Grounds
- 7 Rag Gulch G-W Banking Project
- 8 White River G-W Banking for DEID
- 9 White River G-W Banking in Rag-Gulch

Modify Conveyance Systems

- 10 Calloway Canal Improvements
- 11 Calloway Canal to Cross Valley Canal Interconnection
- 12 Calloway Canal to Lerdo Canal Interconnection
- 13 Multi-District Conveyance Facility
- 14 North Interconnection between North Kern/Shafter-Wasco
- 15 Pilot Arsenic Treatment Plant

- 16 Reverse Flow in the Friant-Kern Canal
- 17 Shafter-Wasco/Semitropic Interconnection on Kimberlina Road
- 18 Shafter-Wasco/Semitropic Interconnection on Madera Avenue
- 19 South Interconnection between North Kern/Shafter-Wasco

NON-STRUCTURAL PROJECTS (SOME LOCATIONS NOT SHOWN ON MAP)

- 20 Energy Usage
- 21 Joint Powers Authority
- 22 Institutional Agreements and Governance for IRWMP Implementation
- 23 G-W Banking for Parties Outside of Poso Creek IRWMP Region
- 24 Optimize the Region's Pumping Lifts
- 25 Enhance Groundwater Monitoring and/or Modeling

ENHANCE ENVIRONMENTAL RESOURCES

- 26 Wildlife Improvements Projects in IRWMP Region
- 27 Environmental Water Management in Support of Wildlife Settlements Outside of IRWMP Region

ENHANCE FLOOD CONTROL

- 28 Enhance Flood Control in the IRWMP Region with a Pipeline Connecting Friant-Kern Canal to Future Flood Structure on Poso Creek

ASSIST ECONOMICALLY DISADVANTAGED COMMUNITIES

- 29 Enhance Water Supply and Treatment Facilities

Regional Stakeholders

- Buena Vista Water Storage District
- Lost Hills Water District
- Rosedale-Rio Bravo Water Storage District
- Southern San Joaquin Municipal Utility District
- Kern County Water Agency
- Friant Water Users Authority
- Kern County Board of Supervisors
- City of Delano
- City of McFarland
- City of Shafter
- City of Wasco
- Lost Hills Utility District
- Kern National Wildlife Refuge

State and Federal Agencies

- California Department of Fish and Game
- California Department of Water Resources
- U.S. Bureau of Reclamation

Legislative Contacts

- Congressman Kevin McCarthy
- Congressman Jim Costa
- Congressman Devin Nunes
- Senator Dean Florez
- Senator Roy Ashburn
- Assembly Member Nicole Parra
- Assembly Member Jean Fuller
- Assemblyman Bill Maze

Your interest in the Region's water resources and views on how they should be managed are important to the Regional Management Group and stakeholders. We welcome your input, reviews, and comments on the Poso Creek IRWMP. The Regional Management Group will continue to meet monthly as part of implementing the plan. Regional Management Group public meetings are typically held at 12 pm on the first Tuesday of each month at the Semitropic Water Storage District offices. You may also participate in the meetings by conference call.

Please contact Mr. Paul Oshel, District Engineer for Semitropic Water Storage District, at (661) 758-5113, for information or to answer questions on behalf of the following eight entities:



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