

ATTACHMENT 9

Program Preferences

9.1 Introduction

As discussed in Attachment 1, the Kern IRWM Group has selected five projects through the project prioritization process described in the IRWM Plan. These projects will implement water management strategies to meet the Region's objectives as well as the Statewide Priorities as discussed herein. The projects included in this Proposal provide many benefits including increasing water supply and reliability, increasing water conservation, improving operational efficiency, improving water quality, promoting resource stewardship, providing flood control, and helping to meet the critical water supply and water quality needs of multiple disadvantaged communities.

It should be noted that virtually the entire region served by the Kern IRWM planning effort conjunctively uses surface and groundwater. The groundwater generally serves as the firm source of water that is called upon particularly in drought years. This conjunctive use of groundwater and surface water is at the heart of water management in Kern County and is the common basis from which much project integration and truly regional benefits are generated, even with small and what otherwise would appear to be locally focused projects. If a project benefits groundwater conditions in one area it almost certainly provides regional benefits in terms drought protection, reductions in conflicts, water quality improvement, etc.

Table 9-1 summarizes both the Program Preferences as well as the Statewide Priorities that each one of the Kern IRWMP projects addresses. Following the summary, a description of how each preference/priority is addressed by the proposed projects is provided.

As the reader will see, the proposed Kern IRWMP projects and the processes used to prioritize and select projects to pursue track very well with the Program Preferences and Statewide Priorities.

9.2 Program Preferences

9.2.1 Regional Project or Programs

The Urban Bakersfield Water Use Efficiency Project and the Tehachapi Regional Water Use Efficiency Project are regional projects providing benefits to the water users of the multiple cooperating agencies. Beyond the direct benefits to the water users of the cooperating agencies involved in both projects in terms of water use reduction, cost savings and reductions in wastewater requiring treatment, the effective conservation and reduction of water demands resulting from the projects reduce the overall regional need for water and the pressure on the water supply systems that divert, store, convey and deliver this water.

Table 9-1: Program Preferences Summary by Project

Program Preferences/ Statewide Priority	Urban Bakersfield Water Use Efficiency Project	Tehachapi Regional Water Use Efficiency Project	Snyder Well Intertie Pipeline for Irrigation and Nitrate Removal Project	Kern Water Bank Recharge and Recovery Enhancement Project	Sycamore Road Flood Reduction Project
<i>Program Preferences:</i>					
Regional Project or Program	X	X		X	
Integrate Water Management Programs and Projects w/in Hydrologic Region				X	
Effectively Resolve Water-Related Conflicts within or Between Regions	X	X		X	
Contribute to Attainment of Objectives of CALFED Bay-Delta Program	X	X	X	X	
Address Critical Water Supply or Quality Needs of DACs		X	X		X
Integrate Water Management w/ Land Use Planning					
<i>Statewide Priorities:</i>					
Drought Preparedness	X	X		X	
Use & Reuse Water More Efficiently	X	X	X		
Climate Change Response Actions	X	X		X	X
Expand Environmental Stewardship	X	X	X	X	
Practice Integrated Flood Management				X	
Protect Surface Water & Groundwater Quality			X		
Improve Tribal Water & Natural Resources					
Ensure Equitable Distribution of Benefits		X	X		X

The Kern Water Bank Recharge and Recovery Enhancement Project is put forward by the Kern Water Bank Authority which is comprised of multiple member agencies serving different parts of the Region. The Kern Water Bank provides regional benefits in bringing water into the Region at times when consumptive demands are low and provides opportunity to capture and store flood water and other wet year water supplies. Without this ability to store wet year water, the Region would not have access to significant amounts of water for dry periods resulting in a further imbalance of regional supply versus demands.

9.2.2 Integrate Water Management Programs and Projects within Hydrologic Region

All of the projects being put forth in this proposal by the Kern IRWMP were selected through a rational process of regional priority setting ensuring that the projects address multiple important regional needs. Further, the Plan provides for many opportunities to look for and create synergies between projects that optimize the regional water management benefits.

Moreover, the Kern Water Bank Recharge and Recovery Enhancement Project stands out in terms of its ability to demonstrate these integrated benefits in solving multiple water management issues. This project provides a place to store high flow or flood water. It provides water storage benefits to the region in the most cost effective manner. It generates new water supplies by converting otherwise lost flood water to usable supplies. It provides drought year protections by providing a highly reliable water supply. It recharges the groundwater beyond the amounts effectively banked with “leave-behind” water components. It also reduces energy use by supporting shallower pumping depths within the groundwater basins it influences.

9.2.3 Effectively Resolve Water-Related Conflicts within or Between Regions

It is well understood that the volume and reliability of SWP water deliveries to Kern County have been in a steady decrease as a result of drought and regulatory impacts. Further, the CVP Friant Division is now providing additional flow for the restoration of the San Joaquin River, again resulting in a reduction in the volume and reliability of water supplies previously destined for Kern County. Groundwater supplies are limited; with the reductions noted of surface water supplies, the groundwater demands are under increasing pressure from those who can drill wells faster and deeper. This condition of chronic water shortage has and will create conflicts over limited supplies within the Region.

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects reduce demands for water within the Region and thus reduces the potential for conflict by addressing the imbalances between supply and demand. Demand pressure on groundwater is reduced in all years and importantly in drought years.

Similarly, the Kern Water Bank Recharge and Recovery Enhancement Project provides a new firm water source as well as additional recharge water that benefits regional groundwater, thus offsetting some of the region’s groundwater overdraft, which is the source of most of the Region’s water management conflicts.

The objectives of these projects are driven by the needs of the associated agencies, and the Region as a whole, to increase water supply (IRWMP Objective 10.2.1) and improve dry period water supplies and reliability.

9.2.4 Contribute to Attainment of Objectives of CALFED Bay-Delta Program

The primary CALFED Bay-Delta Objective met by the proposed projects of the Kern IRWMP revolve around water supply and water supply reliability in providing new storage and water use efficiency in local partnerships. The CALFED program seeks to reduce the mismatch between Delta water supplies, and current and projected beneficial uses dependent upon the Bay-Delta system.

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects directly reduce water demands on SWP sourced (thus Bay-Delta sourced) supplies by conserving water.

The Kern Water Bank Recharge and Recovery Enhancement Project provides an alternative source of dry year water supplies when the Bay-Delta has some of its greatest problems with providing needed export water supplies. The Kern Water Bank, enhanced by the proposed project, will be able to provide additional benefits to its members in terms of dry year water supplies as well as instantaneous capability to store wet year water; again, at times when there is less pressure on the Bay-Delta to provide export water supplies.

9.2.5 Address Critical Water Supply or Quality Needs of DACs

The City of Tehachapi is classified as a Disadvantaged Community (DAC). DACs, as defined by both Propositions 50 and 84, are communities whose average Median Household Income (MHI) is less than 80 percent of the statewide annual MHI. According to the American Community Survey (ACS) of the U. S. Census (2011), for the period 2007-2010, the state of California's MHI was \$61,632 while the City of Tehachapi had a median household income of \$46,250, 75% of the State MHI.

The purpose of the Snyder Well Intertie Pipeline for Irrigation and Nitrate Removal Project is to re-purpose a valuable City asset, the Snyder Well, to the benefit of the City, TCCWD, and the local school district. The project will remove a currently non-potable well from the domestic drinking water system and set it on a path for water quality improvement and possible return as a viable drinking water producer. By removing nitrate-laden water from the aquifer and applying it where the nitrate can be beneficially used, the project is expected to produce some improvement in the quality of the subject wells (particularly the Snyder and Mojave Wells) by lowering nitrate levels over time. Additionally, this project will help maintain the sustainability of the water supply by providing a low cost way of potentially rehabilitating a needed water source thus minimizing the potential health and welfare risks to its citizens.

The Tehachapi Regional Water Use Efficiency Project will reduce demands for water within the City of Tehachapi and the surrounding communities. Assistance in providing otherwise

expensive water conservation measures, such as replacing toilets, will help to assure a sustainable water supply for this Disadvantaged Community.

The City of Arvin is another Disadvantaged Community with an MHI of \$29,740, which is 48% of the State's MHI. The Sycamore Road Flood Reduction Project will assist the City of Arvin in their ability to effectively manage flood water from the local watershed systems. The Project will consist of constructing underground storm drainage facilities to convey stormwater that currently floods areas along Sycamore Road to a regional stormwater retention basin. The Project will reduce the risk of property damage and life/safety concerns. The primary concern is the potential flooding of 30 mobile homes, either stranding the residents at their home or from returning to their homes. By implementing the proposed project, the threatened habitability of these homes is reduced substantially.

9.2.6 Integrate Water Management w/ Land Use Planning

All regional projects in this Proposal are developed to meet established urban and metropolitan water management plan objectives. These urban water management plans that have been developed for the Greater Tehachapi Area, Improvement District No. 4, and the City of Bakersfield are focused to be consistent with the goals of the California Water Plan and those guidelines and objectives of other statewide and regional entities specifically identified by the Department of Water Resources (DWR). Both of the water use efficiency projects effectively integrate water management with land use planning. Conservation is critical to the overall supply to meet the demands associated with existing land use plans.

9.2.7 Statewide Priorities

Drought Preparedness

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects are water conservation projects which reduce demands for water in all water year types including drought water years. They achieve a long-term reduction in water use and thus contribute to a long-term sustainable water supply. They also assist in the management of the groundwater basin by reducing overall water demands, but especially demands for groundwater in dry year types. The Urban Bakersfield Water Use Efficiency Project also has a specific element focused on improving landscape irrigation efficiencies.

The Kern Water Bank Recharge and Recovery Enhancement Project provides a new firm or drought-year water supply. It also provides additional groundwater recharge and the ability to store water that likely would otherwise be lost to beneficial use as high flow or flood water (thus water conservation). It clearly assists in managing the groundwater basin by providing additional recharge and recovery of groundwater.

Use & Reuse Water More Efficiently

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects are water conservation projects/programs that will provide significant reductions in water use and thus contribute to a sustainable water supply for the region, increase the reliability of the existing supply by lessening the existing demand in all year types and are part of an adaptive strategy to deal with climate change by lessening demands regardless of the kinds of changes in supply brought on by climate change.

The Kern Water Bank Recharge and Recovery Enhancement Project provides additional water supply reliability by providing a new firm or drought-year water supply. It provides additional groundwater recharge and the ability to capture and store water that likely would otherwise be lost to beneficial use as high flow or flood water. It also is part of an adaptive strategy to deal with climate change by creating the ability to store water that may be produced as rainfall instead of snowpack, which historically has provided the needed water reregulation of regional precipitation and now is likely to lessen because of a warming climate.

Climate Change Response Actions

The effects of climate change will likely make imported water supplies less reliable in the future. It will reduce the natural storage and reregulation of local surface water supplies by lessening the snowpack, increasing the amount of precipitation that comes in the form of rainfall, and likely reduce the overall volume of precipitation falling on the region. The need for agencies in the Region to adapt to Climate Change, discussed in Section 2.10.11 of the IRWMP will also be addressed by projects chosen to go forward as part of this application.

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects are water conservation projects/programs which will provide significant reductions in water use and thus contribute to a sustainable water supply for the region. These Projects will increase the reliability of the existing supply by lessening the existing demand in all year types and are part of an adaptive strategy to deal with climate change by lessening demands regardless of the kinds of changes in supply brought on by climate change. The projects will also reduce wastewater loads thus slowing the need to build additional treatment plant capacity, thereby reducing the amount of water ultimately needed to be treated. The conservation of water will also reduce the need to pump and pressurize water for extraction, conveyance and delivery thus reducing energy use and GHG emissions.

The Kern Water Bank Recharge and Recovery Enhancement Project provides additional water supply reliability by providing a new firm or drought-year water supply which are likely to occur more often as a result of climate warming. It clearly adds significantly to the conjunctive use ability of the Region's groundwater basin by adding both groundwater recharge and recovery infrastructure. It provides additional groundwater recharge and the ability to capture and store water that would likely otherwise be lost to beneficial use as high flow or flood water in an effort to deal with climate change by providing the ability to store water that may be produced as rainfall instead of snowpack.

Expand Environmental Stewardship

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects promote environmental stewardship by working toward the optimum use of the Region's natural resources. The programs reduce energy use by reducing the amount of water and wastewater pumped and treated. The Urban Bakersfield Water Use Efficiency Project also promotes water use efficiency for landscape irrigation and improves water quality by reducing runoff. The education programs to be implemented in the Urban Bakersfield area teach all these elements of proper resource environmental management to schoolchildren.

The Kern Water Bank Recharge and Recovery Enhancement Project provides additional recharge ponds which will aid owners of agricultural lands to maintain the productivity of their land, and provide intermittent wetland habitat for migratory birds along the Pacific Flyway. The Project's net addition of 189 acres of recharge ponds with associated intermittent wetland habitat for water and shore birds is consistent with Regional Strategy 11.2.5.3:

"Improve and coordinate integrated land use planning to support stewardship of environmental resources, such as local rivers and streams and the Kern Fan, and integrate with habitat conservation plans and other ongoing planning efforts from this point forward", and

'Preserve and improve ecosystem/watershed health throughout the planning horizon"

The need for conserving habitat and natural communities of State and Federal threatened and endangered species drives this purpose and is consistent with promoting land use planning and resource stewardship.

The Snyder Well Intertie Pipeline Project provides an alternative use of an existing source of water thus reducing demands on current potable supplies and leading to improved water quality in a well (or wells) over time. It clearly works toward providing the optimum use of the Region's natural resources by matching a water source of compromised water quality with a beneficial use that will assist in the cleanup of the groundwater

Practice Integrated Flood Management

As mentioned previously, the Sycamore Road Flood Reduction Project will assist the City of Arvin in their ability to effectively manage flood water in this Disadvantaged Community from the local watershed. The Project will reduce the risk of damage to property and life/safety concerns. Secondary to these issues, the Project improves accessibility, decreases costs associated with City resources, improves property values, and increases the life of the streets and roads that are subject to annual flooding.

The Kern Water Bank Recharge and Recovery Enhancement Project will provide for flood control measures through the diversion of flood waters for beneficial purposes. The need for this Project is in part created by the flood reduction needs of areas within Kern County, as some of the is water destined for the Kern Water Bank are from local rivers and streams that

originate in the Kern County part of the Sierras and Tehachapi Mountains. However, part of the flood damage reduction need originates in Tulare County, Kings County, and Fresno County, areas further north, which are also periodically flooded by rivers and streams that originate in the Sierra Nevada. Flood water from these northern areas is diverted as part of regional flood fighting efforts into the Friant-Kern Canal for delivery into the Kern River and thus made available storage in the Kern Water Bank.

Protect and Restore Surface Water & Groundwater Quality

The Urban Bakersfield and the Tehachapi Regional Water Use Efficiency Projects are water conservation projects/programs which will provide significant reductions in water use and thus reduce the demand on surface and groundwater sources lessening the likelihood of their contamination via delivery use and potential reuse. The projects will also reduce wastewater loads thus slowing the need to build additional treatment plant capacity and reducing the amount of water ultimately needed to be treated, disposed of or reused. The conservation of water will also reduce the need to pump and pressurize water for extraction, conveyance and delivery, thus reducing energy use and GHG emissions, which often in their generation, have an adverse impact on surface and groundwater quality as well as air quality.

In addition to reducing water demand, the landscape irrigation efficiency programs of the Urban Bakersfield Water Use Efficiency Project also address water quality concerns by reducing runoff. Runoff from landscaped areas can contain various contaminants, including nutrients from fertilizers, pesticides and trash, which reduce the quality of receiving waters, such as the Kern River and groundwater.

The Snyder Well Intertie Pipeline for Irrigation and Nitrate Removal Project provides an alternative use of an existing source of water reducing demands on current potable supplies; leading to improved water quality in a well (or wells) over time by applying high-nitrate water to turf resulting in nitrogen uptake and removal. This creative alternative for the use of existing facilities, again, provides additional water as an alternative to water which otherwise would be sourced from the SWP and the Bay-Delta thereby lessening the pressure on Bay-Delta by reducing the mismatch between Delta water supplies and current and projected beneficial uses or demands.

The Snyder Well Intertie Pipeline Irrigation and Nitrate Removal Project provides an alternative use of an existing source of water thus reducing demands on current potable supplies, leading to improved water quality in a well (or wells) over time. By removing nitrate-laden water from the aquifer and applying it where the nitrate can be beneficially used, the groundwater produced by the City's wells (particularly the Snyder and Mojave Wells) are anticipated to have lower nitrate levels over time. This Project helps maintain the sustainability of the water supply minimizing the potential health risks to its citizens.

It may eventually have lower nitrate levels allowing the City to return the well as a domestic water source. This would reduce the future capital investment that would be required to construct a new well thus making better use of existing infrastructure without additional construction.

The Kern Water Bank Recharge and Recovery Enhancement Project will recharge very good to excellent quality water from the SWP, CVP, Kern River, Tule River, Kaweah River and/or the Kings River and recover and export slightly lower quality groundwater, both of which will have a net beneficial impact on groundwater quality in the Kern Fan Area. This area has some localized areas of concern for salinity, naturally occurring arsenic, and other constituents.

Improve Tribal Water & Natural Resources

The Proposal does not include projects that improve Tribal water and natural resources. The Tribal project proponents that had projects ranked high on the Priority Project List declined to be included in this current round of Implementation Grant funding.

Ensure Equitable Distribution of Benefits

The Kern IRWM Group Implementation Grant Proposal has a high degree of participation from Disadvantaged Communities. Over half of the proposed grant funding is dedicated to serving the needs of these communities. The Sycamore Road Flood Reduction Project will assist the City of Arvin in their ability to effectively manage flood water that seriously impacts the low income residents of this community.

The Tehachapi Regional Water Use Efficiency Project is a water conservation program that will provide the residents in the City of Tehachapi with free direct-install toilets. Without this free program, many of the residents would struggle to afford these water conservation measures.

Additionally, the Snyder Well Project benefits the City of Tehachapi by reducing the costs associated with serving the irrigation needs of the local school's athletic fields. The most significant cost savings associated with the project benefit the Tehachapi Unified School District allowing them to repurpose funds spent on expensive potable water to educational program needs. This Project will also help maintain the sustainability of the water supply by the removal of nitrate-laden groundwater from the aquifer. A goal of the project is to reduce nitrate concentrations in the City's wells to help ensure that the community has access to safe, clean, and affordable water.

These three projects were put forward for this funding application by the Kern IRWM Group as a result of the emphasis from the Plan to ensure the water related issues of the region, especially of the Region's Disadvantaged Communities, were being equitably addressed. The process used for the inclusion of projects in this Proposal for IRWM Implementation Grant funding is rigorous, yet very inclusive and resulted in three of the five selected projects benefiting Disadvantaged Communities within the Kern IRWM Region.