WaterSMART Drought Response Program: Drought Resiliency Projects for Water Year 2025

Funding Opportunity No. R25AS00013

October 7, 2024

Southern San Joaquin Municipal Utility District Woollomes Avenue Recharge Project

Applicant
Southern San Joaquin Municipal Utility District
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1. Technical Proposal

1.1 Executive Summary

Project Information	
Date	October 7, 2024
Project Name	Woollomes Avenue Recharge Project
Construction Expected	June 2026 to June 2027 (12-month duration)
On Federal Land/ Facility?	No
Applicant Information	
Name	Roland Gross
Title	General Manager, Southern San Joaquin Municipal Utility District
City, County, State	Delano, Kern, California
Category	Category A – Water District
Funding Group	Funding Group II
Task Area	Task A

The Southern San Joaquin Municipal Utility District (SSJMUD, District) proposes the Woollomes Avenue Recharge Project which involves converting 320 acres of District lands into recharge ponds and installation of conveyance from the District's mainline to the site. The proposed Project is a Task A project that increases the reliability of water supplies through infrastructure improvements. In line with the eligibility criteria, SSJMUD qualifies as a water district and meets the requirement of having water delivery authority thereby is a Category A applicant. The Project addresses the District's water supply challenges, including the need for enhanced groundwater recharge capacity during wet years and increased water conveyance for recharge. The San Joaquin Valley periodically faces severe drought conditions and reduced water deliveries when water storage reservoirs are at reduced levels. Increasing groundwater recharge through increased conveyance and recharge capacity can play a crucial role in alleviating the impacts of these drought conditions, ensuring a more resilient water supply for the region. Implementation of the Project provides an average annual volume of 9,800 AFY with a 10-year average annual surface supply of 97,920 AF for groundwater recharge. The Project is supported by the Poso Creek Integrated Regional Water Management (IRWM) Plan, the IRWM Region's Drought Contingency Plan, and the Kern County Groundwater Sustainability Plan (GSP).

Provide relevant background information about the applicant and service area such as services provided, population served, irrigated acres served, crops grown in the project area, etc.

SSJMUD was organized in 1935, under the Municipal Utility District Act of the Public Utility Code of California, with the purpose to obtain and provide a supply of water for lands located within the boundaries of the District. SSJMUD first entered a 9(e) Water Services Contract with USBR in 1945. In 2011, this Water Service Contract was converted to a permanent 9(d) Repayment

Contract with the USBR, which now has the benefit of being a perpetual contract for the existing amounts of contracted water supply, thus securing the District's water supply from the Central Valley Project (CVP).

The SSJMUD Groundwater Sustainability Agency (GSA) accounts for approximately 66,000 district acres and 1,083 non-district acres with a total irrigated acreage of approximately 54,126 acres (Kern County GSP, 2024). SSJMUD's 2020 Agricultural Water Management Plan (AWMP) identifies that about 75% of the District's irrigated lands are planted to permanent crops, primarily almonds (30%), grapes (25%), pistachios (9%), and oranges (10%). The Cities of Delano and McFarland compromised of 6,073 acres and small community and domestic water users are within SSJMUD's jurisdictional area (Kern County GSP, 2024). Land within the city limits is classified as urban, with some land in deciduous crops or idle. The crop irrigation water requirement is estimated in SSJMUD's 2020 AWMP update by multiplying crop-specific gross crop water usage (AF/acre) by the number of acres for each respective crop.

Include details regarding the applicant's water supplies.

The District in the CVP's Friant Division receives water via the Friant-Kern Canal (FKC) under a contract with USBR. Their annual contract allocations are summarized in Table 1. Figure 1 illustrates CVP water deliveries through the FKC to SSJMUD.

Table 1. Annual Contract Allocation

Water Supply	Annual Contract Allocation (acre-feet)
CVP – Class 1	97,000
CVP – Class 2	45,000
Total	**142,000**

Due to climate change, regulatory requirements, and FKC capacity constraints, the District does not consistently receive scheduled water required to meet irrigation demands. In this recent 10-year period from 2014-2023, the total surface water received in a year varied from about 2,300 to 115,400 acre-feet. To be resilient to droughts, the District needs to be able to recharge groundwater to store water in the aquifer during the years when water is available. The District's CVP supply allocations have averaged 46 percent during the 10-year period, signifying a substantial decline in surface water reliability. According to SSJMUD's 2020 AWMP, the District does not own any groundwater extraction wells, but local landowners privately own and operate groundwater pumping wells within the District so groundwater pumping is typically estimated. In addition, the District does not make deliveries directly to the Cities of Delano and McFarland. The cities rely solely on groundwater supplies to meet demand. The District monitors groundwater levels within the District using groundwater monitoring wells. In recent drought years, the Kern Subbasin has been critically over drafted as a result of extensive groundwater pumping, so native groundwater supplies have been deemed inadequate to meet the demand of regional water users. Table 2 provides a summary of the total water supplies used by the District

in the 10-year historical period from 2014 to 2023. The average annual water supply for the 10-year period is 70,193 AF.

Table 2. Summary of Water Supply from 2014-2023

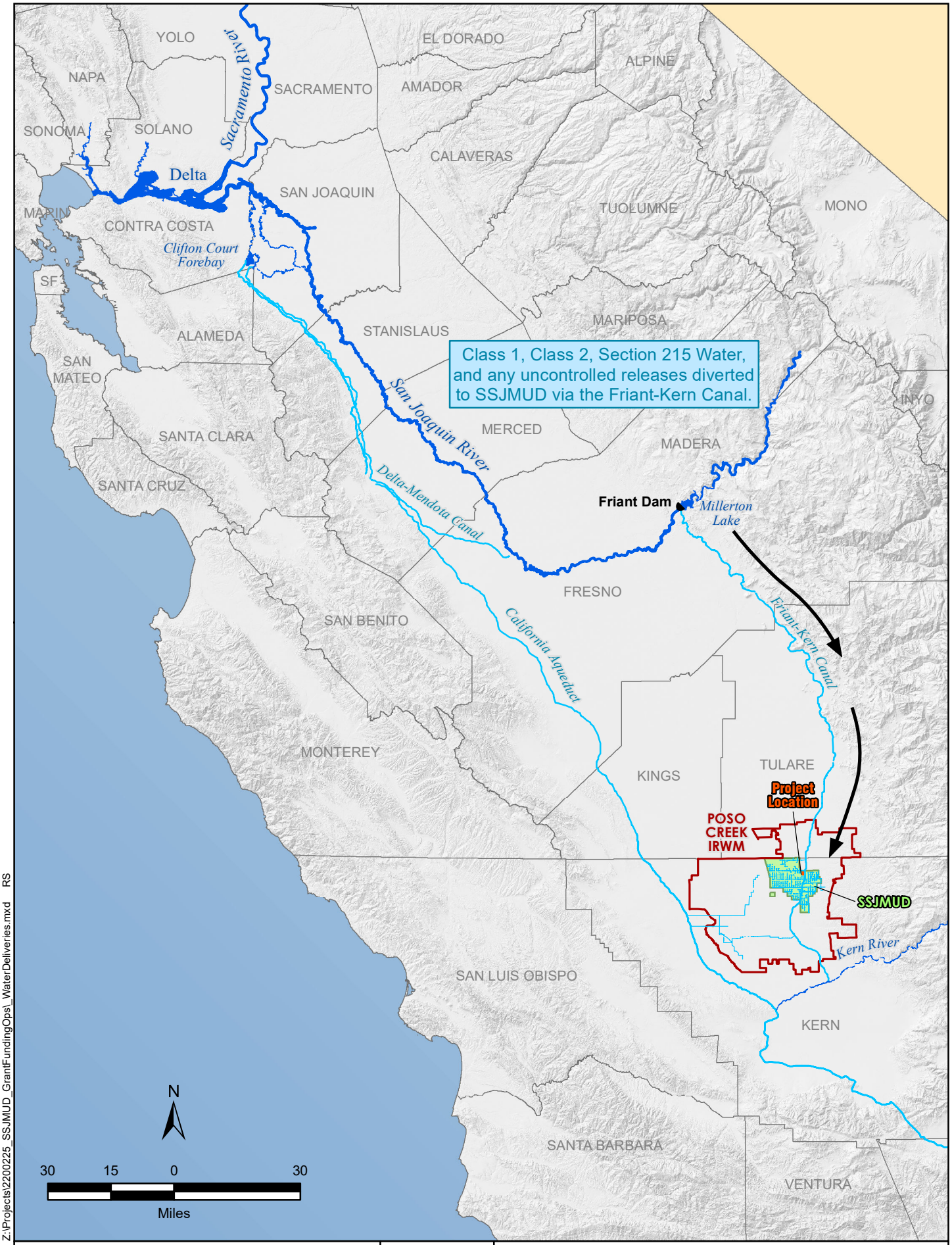
Year	Surface Water Total (acre-feet)[1]	Agency Groundwater (acre-feet)[2]	Recycled M&I Water (acre-feet)[3]	Other (acre-feet)	Total (acre-feet)
2014	5,750	0	4,720	0	10,470
2015	2,295	0	4,732	0	7,027
2016	73,236	0	4,450	0	77,686
2017	115,368	0	4,386	0	119,754
2018	97,957	0	--	0	97,957
2019	103,635	0	--	0	103,635
2020	81,240	0	4,424	0	85,664
2021	26,405	0	4,546	0	30,951
2022	47,215	0	4,520	0	51,735
2023	112,395	0	4,654	0	117,049
Total Average Water Supply for 2014-2023 in AF[4] =					701,927
Average Annual Water Supply = 70,193 acre-feet					

Notes:

1. *Surface Water Total includes CVP-Friant deliveries on the FKC. No long-term term transfers and exchanges occur in SSJMUD.*
2. *The District does not own or operate groundwater extraction facilities. Local landowners and the Cities of Delano and McFarland independently utilize groundwater supplies from the underlying groundwater basin within the District.*
3. *Recycled M&I water includes historical wastewater flows from City of Delano for agricultural irrigation. Data is missing in 2018 and 2019. Recycle water from City of McFarland was not reported because the supplies are sold to a neighboring water district.*
4. *This is assumed to be the 10-year total water supply for the period 2014-2023.*

1.2 Project Location

The Project is in Kern County, California, approximately 5 miles Southeast of the City of Delano and 6 miles north of the City of McFarland. The Project latitude is {35°44’38.29220”N} and longitude is {119°12’2.81732”W}. The recharge site is located at APNs 050-130-20, 050-130-21, 050-130-22, 050-130-23, and 050-130-38. The proposed recharge basin is located about a mile west of the Friant Kern Canal on Woollomes Avenue. The location of the recharge basin site in relation to the SSJMUD is shown in Figure 2, project features are included in Figure 3. Both are included at the end of this section.



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05-Oct-2023

Drought Resiliency Project
Kern County, California

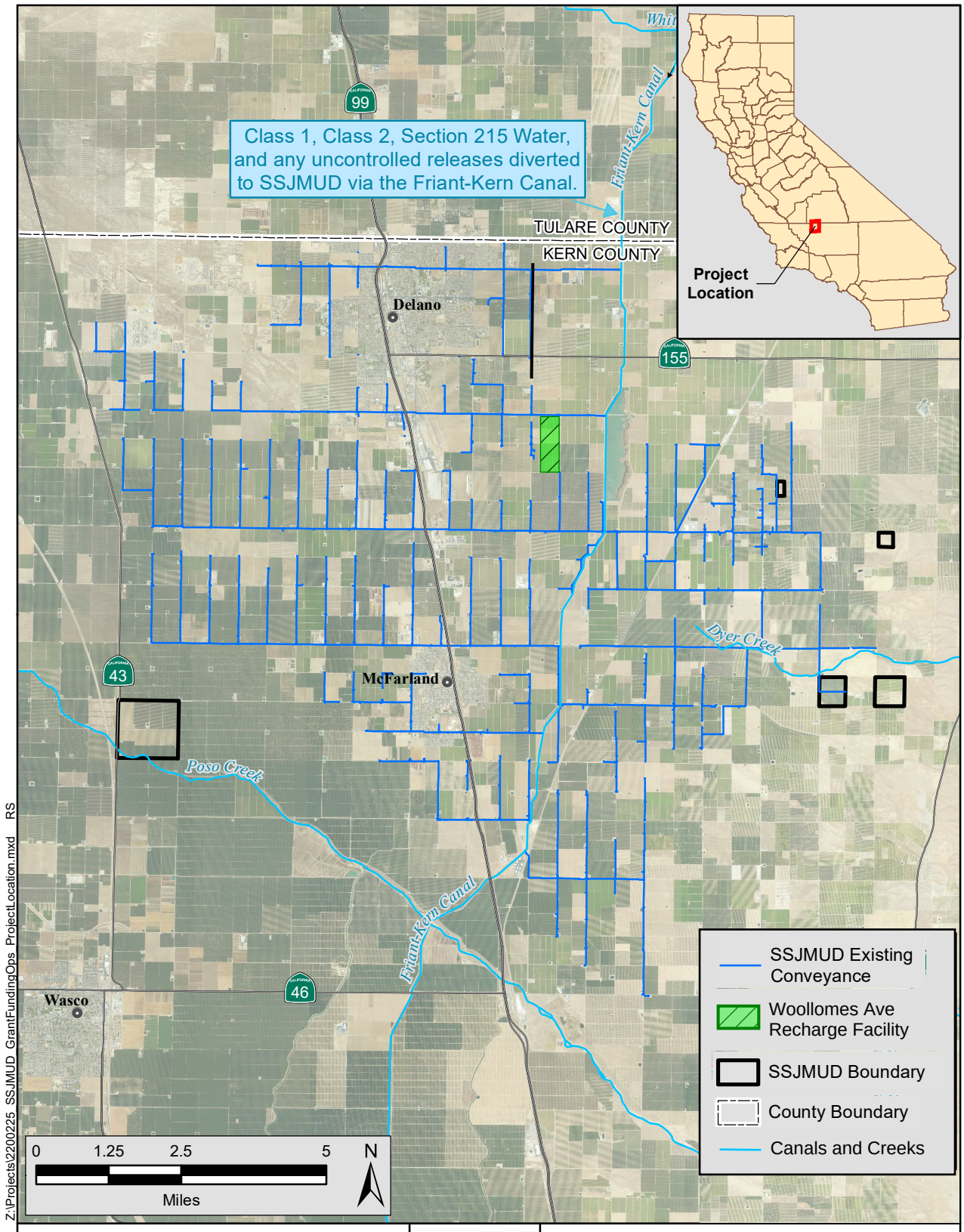
Southern San Joaquin Municipal Utility District

GEI Consultants
Bookman-Edmonston Division

Water Deliveries into SSJMUD

SEPTEMBER 2024

Fig 1



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03-Oct-2024

Drought Resiliency Project
Kern County, California

Southern San Joaquin Municipal Utility District

GEI Consultants

Project Location Within SSJMUD Boundaries

SEPTEMBER 2024 **DRAFT** Fig 2

Project Features

Woollomes Avenue Recharge Facility

GEI Consultants

Drought Response Program

September 2024 Fig. 3

1.3 Project Description

The Woollomes Avenue Recharge Project involves converting a 320-acre parcel of farmland into a groundwater recharge facility. The proposed project will connect directly to the District's existing water conveyance system. The project's goals are to enhance groundwater resources, manage stormwater runoff, mitigate flood risks, and improve water management flexibility by capturing and storing excess rainwater and snowpack runoff for aquifer recharge. The preliminary layout and features of the project are depicted in Figure 3.

Site Selection and Acquisition

The site of the Woollomes Avenue Recharge Project is ideal for recharge capabilities based on its factors such as soil permeability, proximity to water sources, existing conveyance infrastructure, and compatibility with land use. The parcels were acquired in 2024 and went through a detailed evaluation process. A land survey was then conducted to support the development of the preliminary design and to confirm that the site's characteristics met the requirements for a groundwater recharge basin. The location of the site and its connection to the existing infrastructure are illustrated in Figure 2.

Design and Layout

The facility design includes constructing a series of basins with levees and berms to manage water flow and promote infiltration. Exterior levees will form the perimeter, while interior berms will direct water into designated spreading ponds. Interior channels will distribute water to individual recharge ponds, optimizing infiltration. The earthwork is designed to balance cut and fill quantities, avoiding the need for importing or exporting soil. Figure 3 provides a visual representation of the preliminary basin layout, including the locations of levees, berms, and interior channels.

Conveyance System

The project includes constructing a conveyance connection from the District's 48-inch diameter mainline to turnout in the recharge facility. This conveyance system will utilize a tee connection from the mainline and extend approximately half a mile along the east side of the recharge site. Along the conveyance route, three inlets are proposed to distribute water to three sections of the basin, each containing about eight ponds, totaling approximately twenty-four ponds. Each pond will include an interbasin structure to facilitate water movement between ponds. This configuration is designed to allow for controlled water delivery and efficient recharge operations. These features and configurations are preliminary and may change as the project design progresses. The proposed connection points for the conveyance system are detailed in Figure 3.

Construction Procedure

The construction process will involve earthwork practices using earthmoving equipment to minimize severe compaction of the basin bottom during excavation. This equipment will also be used for compacting the basin berms and grading to shape the basins and establish the

required gradients for water flow. Soil will be transported and compacted to form levees using tractors and scrapers. The levees will be compacted to support vehicle access around the facility and turnouts. Surveying equipment, including total stations and GPS devices, will be utilized throughout the construction process to ensure that the basins are built to the specified dimensions and gradients.

1.4 Applicant Category and Eligibility of Applicant

Identify whether you are a Category A applicant or Category B applicant and provide a short narrative summary describing how you meet the eligibility requirements of that applicant category.

Southern San Joaquin Municipal Utility District is a Category A applicant. In line with the eligibility criteria, SSJMUD qualifies as a water district and meets the requirement of having water delivery authority. Additionally, the District is located in California, which is part of the Western United States, thereby fulfilling the geographic requirements for Category A applicants.

1.5 Evaluation Criteria

1.5.1 Evaluation Criterion A – Severity of Drought or Water Scarcity and Impacts

Describe the recent, existing, or potential drought or water scarcity conditions in the project area. Is the project in an area that is currently suffering from drought or water scarcity, or which has recently suffered from drought or water scarcity?

The project is located in Kern County, an area that has experienced prolonged and severe drought conditions, resulting in significant water scarcity over the past two decades. According to U.S. Drought Monitor Time Series Data (Figure 4), the county has seen repeated periods of intense drought, with particularly severe episodes occurring from 2007 to 2010, 2012 to 2016, and 2020 to 2024. During these periods, large portions of the county were classified under the "Extreme" (D3) and "Exceptional Drought" (D4) categories—the most severe drought classifications on the U.S. Drought Monitor scale.

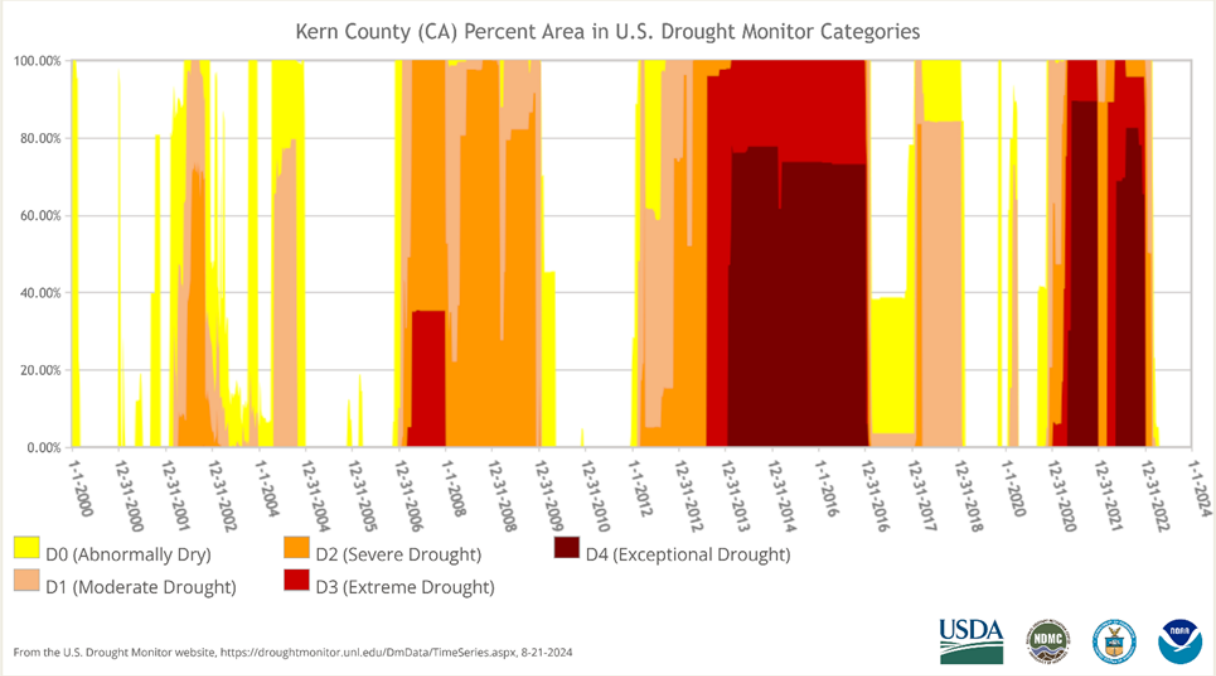


Figure 4: U.S. Drought Monitor Categories in Kern County CA (2000-2024)

The drought from 2012 to 2016, in particular, stands out as one of the most intense on record, during which nearly all of Kern County was persistently categorized under D3 and D4 conditions for several consecutive years. This period of exceptional drought not only affected the water supply for agricultural purposes but also placed immense pressure on municipal water supplies, groundwater levels, and overall ecosystem health.

In more recent years (2020 to 2024), drought conditions have once again worsened, with extreme drought covering significant portions of the county. Despite short periods of relief, such as those seen around 2017, the overall trend has been one of increasing severity and frequency of drought. The county's reliance on groundwater, combined with these persistent

droughts, has led to a dramatic depletion of the groundwater aquifer, exacerbating water scarcity challenges.

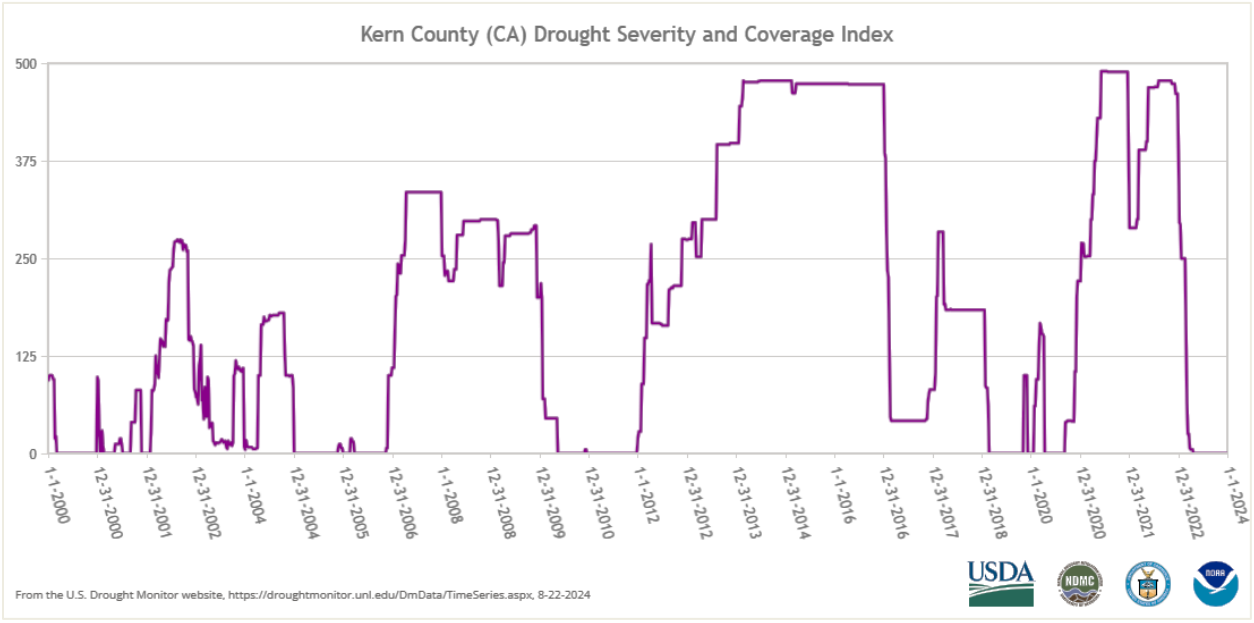


Figure 5: U.S. Drought Monitor DSCI in Kern County CA (2000-2024)

The US Drought Monitor's Drought Severity and Coverage Index (DSCI) further highlights the severity of these conditions, as shown in Figure 5. The DSCI ranges from 0 (no drought) to 500 (the entire area in the worst category of drought) and is a weighted sum representing the proportion of each area under different drought levels. Generally, DSCI values can be interpreted as follows: lower values (0-100) suggest minor drought impacts, moderate values (100-200) indicate more significant and widespread drought, and higher values (200-500) represent severe to exceptional drought conditions affecting large areas. Kern County's DSCI averaged 237, reflecting the widespread drought experienced in the region.

Periods of high DSCI values in Kern County, especially between 2012-2015 and 2020-2022, highlight the widespread and severe droughts in the region. The highest recorded DSCI was 473 during the severe drought from 2012-2016, indicating that nearly the entire area was experiencing extreme to exceptional drought conditions. While the DSCI has declined somewhat in recent years, the elevated levels suggest that drought and water scarcity remain urgent concerns for the region.

Overall, Kern County's history of extreme and persistent drought conditions highlights the ongoing challenges the region faces in managing its water resources. The dry conditions, often categorized under "Extreme" (D3) and "Exceptional Drought" (D4), alongside high DSCI values demonstrate the severe impact of drought on the area. Therefore, water scarcity continues to pose a significant and persistent threat.

Describe any projected increases to the severity or duration of drought or water scarcity in the project area resulting from changes to water supply availability and climate change.

The Central Valley Project (CVP) allocations data, as illustrated in Figure 6, provides clear evidence of the increasing severity and duration of droughts in the region and its effects on water deliveries. The historical trend in CVP allocations from 2013 to 2022 reveals a significant reduction in water supply during drought periods. Allocations dropped as low as 5% in both 2014 and 2015, with similarly low levels observed during the 2020-2022 drought. Over the 10-year period from 2013 to 2023, the District's average CVP allocation was 46%, highlighting a substantial decline in surface water reliability. These reductions underscore the increasing severity of droughts and the growing challenges in maintaining water availability during such times. This trend clearly demonstrates the impact of drought on water availability for CVP contractors, including SSJMUD, which depends on water from the Friant-Kern Canal.

It is anticipated that future droughts will not only occur more frequently but also persist for longer durations, leading to further reductions in water supply availability. As shown by the sharp drop in CVP allocations during past droughts, the region is highly vulnerable to fluctuations in water availability. Without sufficient precipitation and snowpack to replenish reservoirs, CVP allocations are likely to remain low or decline further, exacerbating water scarcity in the project area. This ongoing trend highlights the urgency of addressing climate-induced changes in water supply. These changes will significantly impact water supply availability, requiring water management planning to ensure that demands are met.

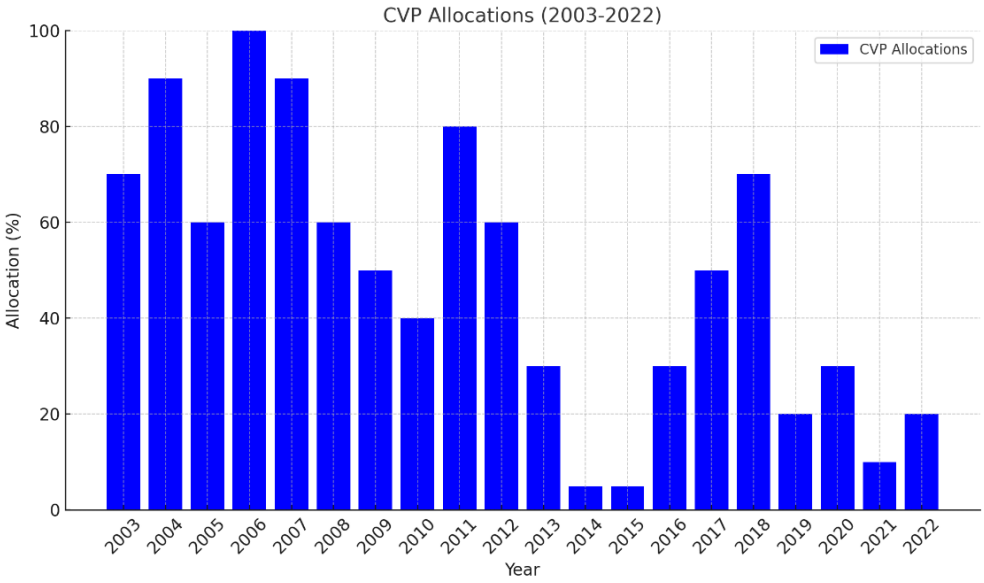


Figure 6: Central Valley Project Historical Allocations (2003-2022)

What are the ongoing or potential drought or water scarcity impacts to specific sectors in the project area if no action is taken, and how severe are those impacts?

Without implementing groundwater recharge or other water management projects, the District faces worsening groundwater overdraft, with annual deficits up to 18,000 AF, depending on the water year. This depletion poses a serious threat to the region's primary industry, agriculture, jeopardizing the long-term viability of operations.

Agriculture within SSJMUD, especially high-value permanent tree crops like deciduous fruits, nuts, and grapes, is particularly vulnerable to water shortages. These crops require consistent, long-term water supply due to the nature of permanent agriculture, where investments in trees and vines cannot be easily paused or restored if water becomes unavailable. Without water management projects, the District would be forced to fallow large regions of farmland to manage with the overdraft. With an average annual consumptive water use of three acre-feet per acre, this would mean taking up to 6,000 acres of productive agricultural land out of production. Such a reduction would lead to substantial financial losses for farmers, disrupt local food supply chains, and negatively impact related industries such as food processing, transport, and food supply.

Whether there are public health concerns or social concerns associated with current or potential conditions.

Yes, there are significant public health and social concerns associated with the current and potential water conditions in the region. As groundwater levels decline, residents relying on private domestic wells face water shortages, which could lead to a lack of access to safe and clean drinking water. Rural households are particularly vulnerable because their wells are often shallower, making them prone to drying up first. This can result in residents needing to rely on expensive or unreliable alternatives like bulk water deliveries, posing a health risk due to potential water quality issues and reduced hygiene. Furthermore, reduced water availability could concentrate contaminants like arsenic and nitrates in groundwater, increasing long-term health risks. Social concerns include the displacement of farming communities due to fallowed agricultural land and increased unemployment, as well as rising water costs that may disproportionately affect low-income households.

Whether there are ongoing or potential environmental impacts.

Yes, environmental impacts from groundwater depletion are already evident and will likely worsen if no action is taken. A primary concern is the decline of ecosystems that rely on consistent groundwater supplies, such as wetlands and habitats for wildlife. Reduced groundwater flow can negatively affect biodiversity, leading to the loss of species that depend on these habitats. Additionally, prolonged overdraft could lead to land subsidence, which can damage critical infrastructure such as roads, bridges, and irrigation systems, further disrupting both the natural environment.

Whether there are local or economic losses associated with current water conditions that are ongoing, occurred in the past, or could occur in the future.

Current water shortages are already causing significant economic strain in the region, primarily due to their impact on agriculture, which is the backbone of the local economy. The ongoing drought and water shortages are having a profound effect on agriculture throughout California. For example, in 2021 alone, California reported over $1.2 billion in agricultural losses due to drought, with a large portion of these losses tied to high-value crops like almonds, pistachios, and grapes, which are highly sensitive to water shortages . In Kern County, almond growers alone experienced nearly $500 million in revenue losses during the drought due to reduced water allocations.

These economic losses extend beyond the fields. Reduced crop yields lead to higher prices for consumers, fewer employment opportunities in farming and related industries, and a decrease in export revenue. The impact on the labor market is significant, as fewer acres are planted, and labor-intensive crops are often the first to be cut back. During the 2014-2015 drought, for example, approximately 18,600 agricultural jobs were lost across California, with many of these losses occurring in the Central Valley.

In addition to crop losses, farmers are increasingly being forced to fallow land or transition to less water-intensive crops, such as reducing cotton and alfalfa in favor of crops that require less irrigation. In 2021, an estimated 395,000 acres of farmland were fallowed in California, with Kern County among the hardest hit. This shift has long-term implications for the region's agricultural productivity and economic stability, potentially leading to reduced crop diversity, less income for growers, and long-term economic challenges for rural communities dependent on agriculture.

Overall, the risk of further economic and local losses remains high. As water availability becomes increasingly unpredictable, economic losses are expected to rise, heightening the uncertainty surrounding the future of water-reliant industries. These challenges emphasize the critical need for effective water management and sustainable practices to help mitigate drought.

1.5.2 Evaluation Criterion B – Project Benefits

Sub-Criterion B.1 – Project Benefits (Tasks A, B, D Only)

What is the estimated quantity of additional supply the project will provide and how was this estimate calculated?

The estimated annual additional water supply volume is 9,800 AFY. This estimate is based on a 0.5 foot per day recharge rate for a recharge area of 272 acre (320 acre*0.85 effective area) for a daily recharge of 136 Acre-feet per day (272 acres * 0.5 feet/day). Based on assumed recharge for 6 months each year available wet years approximately every 4 out of 10 years, the annual average is approximately 9,800 AF (136 AFD * 30 days/month * 6 months/year * 4/10 years = 9,792 AFY). The average annual estimate of 9,792 AFY over 10 years is 97,920 AF.

What percentage of the total water supply does the project's water yield represent? How was this estimate calculated?

The total project water yield for implementation of the project of 9,800 AFY represents approximately 14 percent of the average annual water supply for the 10-year average from 2014-2023. This average annual water supply includes CVP-Friant Class 1 and Class 2 deliveries and recycled supplies from the City of Delano.

Table 3. Project Water Yield

Total Project Water Yield in AFY	**9,800**
Average Annual Water Supply in AFY	**70,193**
Percent Yield	**14%**

How will the project build long-term resilience to drought or other water reliability issues?

The project will build long-term resilience to drought by utilizing groundwater recharge during wet periods to provide operational flexibility for the District and the overall region. SSJMUD has previously conducted a District-wide feasibility study to identify potential direct recharge sites. In addition, SSJMUD has also conducted a site-specific groundwater recharge evaluation on the proposed recharge site to confirm the findings of the study prior to acquiring the site for groundwater recharge. Implementation of the Project is part of SSJMUD ongoing effort to develop its own groundwater recharge capacity. Although the District has recently added groundwater recharge facilities, in 2023 and 2024, SSJMUD needs additional recharge facilities to utilize all the wet year water supplies available. The District is planning to construct the proposed recharge facility to help capture excess flood waters such as Uncontrolled Season Class 2 water, Section 215 water, and Unreleased Restoration Flows (URFs).

How many years will the project continue to provide benefits?

The expected life of project operation is 50 years. This is the typical timeframe used by various Districts within the Southern San Joaquin Valley to calculate how much they would need in their capital reserve for when it comes time to modify certain components of their water delivery infrastructure.

Provide a qualitative description of the degree/significance of the benefits associated with the additional water supplies.

The degree and significance of benefits associated with the proposed project is the increase of recharge and conveyance capacity. Project benefits include:

1. Improved Water Flexibility: The increased recharge and water conveyance will improve the District's water supply flexibility especially during periods of wet, high demand, and drought. Higher conveyance capacity allows for better control over water distribution,

enabling adaptive responses to changing conditions, such as redirecting surface water to increased recharge and adjusting allocation during peak demand or drought. During the recent 2023 wet year, the region encountered substantial floodwater flows. However, the District's local infrastructure was unable to efficiently capture and manage these abundant water resources, primarily due to the inadequacy of the existing recharge and conveyance capacity. This situation highlighted the District's need for a more flexible and improved conveyance system with connection to recharge facilities that could effectively accommodate wet year water flows. With a recharge capacity of 0.5 ft/day the Woollomes Avenue Recharge Project increases the District's recharge capacity to efficiently capture flows for recharge while also satisfying irrigation demands.

2. Improved Water Security: The Woollomes Avenue Recharge Facility ensures improved water security as it provides increased capacity to capture unscheduled uncontrolled flood flows. Alongside the contracted water supply, the District has opportunities to receive a portion of the available wet year water approximately 4 out of 10 years from Friant Dam, as part of the safety management of water levels for the dam. The availability of uncontrolled releases during flood events or wet years is estimated by Historical Records of "Other Water". To facilitate the receipt of uncontrolled releases during wet years, the District must enhance its in-district conveyance to enable effective delivery for recharge.

   The District is also preparing for expected increase of contract water deliveries as the first phase of restoration of the FKC has recently been completed in 2024. As previously discussed, the FKC serves as the primary delivery route for SSJMUD's surface water supply. The FKC is a 152-mile canal designed with a maximum capacity of 5,300 cubic feet per second (cfs) to supply conveyance to twenty-six downstream long-term contractors, including SSJMUD. However, maximum capacity has not been fully realized due to various factors such aged infrastructure, localized seepage through embankments, and regional land subsidence. Through the Friant-Kern Canal Middle Reach Capacity Correction Project, the Friant Water Authority has restored capacity in a 10-mile portion of the FKC that is scheduled for completion in 2024. Restoration of the canal will lead to increased flows to the District. Hence, increased capacity is needed to capture and accommodate the increased flows resulting from the restoration of the canal.

3. Reduced Groundwater Depletion: In the region where groundwater is an important water source, increased conveyance for recharge from the Project can reduce the reliance on unsustainable groundwater pumping. This can help mitigate negative effects of over-extraction and prevent land subsidence. During drought conditions, the District experiences reduced allocations of Class 1 and Class 2 water supplies. Therefore, local landowners heavily depend on stored groundwater to meet irrigation demands. The Project will conserve groundwater by allowing for an increased delivery of surface water

within the District for recharge. Adding conveyance capacity to simultaneously meet recharge and irrigation demand will help replenish groundwater supplies that will be available to landowners in dry years. In compliance with the Sustainable Groundwater Management Act (SGMA) of 2014, SSJMUD, in conjunction with neighboring districts, has helped developed a groundwater sustainability plan for Kern County. Part of this plan is a series of projects and management actions developed to be implemented by the District to maintain groundwater sustainability. Expanding the conveyance capacity within the District will enable more efficient water transport for recharge of groundwater and significantly support the Kern County GSP long term planning to groundwater sustainability.

Overall, the additional capacity to recharge available surface water supplies positively impact sustainability of the region and enhance the water management capabilities of SSJMUD's system.

How will the project supply help buffer against water shortages, reduce the need for emergency responses, and enhance the resilience of water systems?

Because the District has conveyance connections from the FKC to deliver CVP water to their distribution system, adding recharge ponds in-District with connection to the FKC adds recharge capacity and reduces the reliance on neighboring North Kern Water Stage District (NKWSD)'s banking facilities, which do retain a portion of the banked supply. Capacity in the neighboring NKWSD groundwater bank is in high demand during wet periods and SSJMUD cannot always recharge all the surface water available due to the limited priority of use in agreement with NKWSD. As the District and other neighboring CVP contractors are developing direct recharge and recovery facilities of their own, it will complement the use of NKWSD's groundwater storge facilities. NKWSD is often limited by capacity when the Kern River is also providing wet year water to their recharge facilities. Banking facilities that are out of district typically require a portion of the water banked to remain in the banking facility, which then reduces the volume of return water available to the SSJMUD.

The Project will provide a buffer against reduced surface water supplies in drought years by increasing the conveyance and recharge capacity for groundwater recharge of wet year flows. Utilizing groundwater recharge allows for the District to better management available water supplies for later beneficial use in drought periods. This will mitigate the over drafting of groundwater supplies and increase the resiliency of the District water system to capture excess flood waters.

Sub-Criterion B.3.a – Climate Change

In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

The focus of the proposed project is to provide drought resiliency through the construction of groundwater recharge ponds. However, the project indirectly mitigates the risks of other natural hazards such as wildfires and floods. Groundwater recharge replenishes the groundwater aquifer, which increase groundwater levels and may reduce the severity of wildfires in the area. To address flood risk, recharge ponds can be used to provide a controlled space for recharge of excess FKC supplies during wet periods with heavy rainfall. The proposed conveyance to the recharge facility allows for gradual release of flood flows for groundwater recharge, thereby mitigating the potential flooding in areas downstream of the project area. The District can also adjust the conveyance capacity to the recharge facility for flood control management in months when heavy rainfall is forecasted.

Does the proposed project include green or sustainable infrastructure to improve community climate resilience?

Yes, the proposed recharge facility is a prime example of green infrastructure due to its alignment with sustainable environmental practices and its long-term benefits for water management and climate resilience. Green infrastructure, as defined by the EPA, includes systems that mimic natural processes to manage water resources in ways that improve environmental health. The recharge facility accomplishes this by capturing stormwater or surplus surface water, directing it to recharge basins where it infiltrates into the ground, naturally replenishing groundwater supplies.

Unlike traditional "gray" infrastructure, which often relies on hard, engineered systems for flood control or water treatment, recharge facilities work with natural processes to restore and enhance hydrological cycles. This sustainable approach to water management not only increases groundwater storage but also supports the filtration of pollutants, improving overall water quality. Additionally, by reducing surface runoff and mitigating the impact of storm events, recharge basins help prevent local flooding, further contributing to the community's climate resilience. A recharge basin meets the criteria for green infrastructure by promoting sustainable water management, enhancing groundwater levels, and improving the overall resilience of the region.

Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

Water quality problems, notably nitrates, arsenic, and TCP contamination, are widespread in the San Joaquin Valley, posing significant risks to drinking and irrigation water as a result of chronic lowering of groundwater levels. Investing in increased groundwater recharge, is vital to capture more surface water, raise groundwater levels, and enhance water quality by recharging good quality water. The Project aims to increase recharge capacity, which will offset groundwater pumping. Project implementation will help capture wet year flows that will otherwise be lost outside of the District down the San Joaquin River and to the Sacramento-San Joaquin River Delta

if not captured. Replenishment of the groundwater aquifer through groundwater recharge lowers the pump lift and energy required to return banked water for future beneficial use during drought operations, thereby reducing greenhouse gas emissions.

Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

As a supplier of water for local agriculture, SSJMUD relies on surface water from the Central Valley Project (CVP). The region is heavily dependent on irrigation, and limited water supplies put increasing stress on the District's water systems. Prolonged droughts have led to over-pumping, which has significantly lowered groundwater levels, contributing to land subsidence—a critical issue that threatens infrastructure and agricultural productivity.

By capturing un-storable, uncontrolled water releases from the Friant-Kern Canal (FKC) and diverting them to recharge basins, the project helps replenish groundwater supplies. This process not only protects water resources but also mitigates land subsidence, which is caused by excessive groundwater extraction. Through improved groundwater recharge, the project promotes the long-term health of soils and lands, sustaining the agricultural economy while ensuring a stable water supply for future use.

Does the proposed project contribute to climate resiliency in other ways not described above?

Implementing projects that promote recharge of groundwater are essential to protect against impacts of climate change. The impact of climate change on agricultural communities has led to a range of challenges that threaten the region. Extreme weather events such as rising temperatures, irregular precipitation, and prolonged droughts have caused reduced crop yields, posing a threat to staple crops, and affecting the livelihoods of agricultural communities. The improved water supply reliability resulting from the project will directly enhance climate resilience by ensuring a consistent water source during periods of climate-induced droughts. The proposed project will help mitigate the impacts of droughts by ensuring that groundwater reserves are available, therefore reducing vulnerability to drought. This provides a buffer during periods of drought or water scarcity, offering a reliable water supply even when surface water sources dry up. Agricultural communities can continue to sustain their crops and maintain their livelihoods, mitigating the adverse effects of climate variability and extreme weather conditions on their farming activities. The availability of groundwater helps to ensure the resilience and stability of agricultural production, safeguarding communities against the economic hardships associated with prolonged droughts.

Sub-criterion B.3.b – Ecological Benefits

Does the project seek to improve the ecological resiliency of a wetland, river, or stream in the face of climate change?

The project contributes to improving ecological climate change resiliency, particularly in the San Joaquin River system. The FKC serves as a channel for transporting surface water from Millerton Lake behind the Friant Dam to CVP contractors. During peak runoff periods, uncontrolled

floodwater is released from Millerton Lake, potentially causing ecological damage. The project aims to increase in-district recharge, allowing SSJMUD to manage these unscheduled releases and mitigate flood impacts downstream in the San Joaquin River system.
Flooding can negatively impact endangered species in the San Joaquin River system in several ways, including:

1. Disruption of nesting grounds: Floods can wash away or inundate nesting areas, reducing populations of endangered species.
2. Alteration of river geography: High-intensity floods can change the structure of riverbanks, altering habitats for aquatic species.
3. Changes in water quality and temperature: Floods can modify water quality and temperature, affecting the survival and reproductive cycles of endangered aquatic species.
4. Displacement and habitat loss: Flooding can destroy critical habitats, making it difficult for endangered species to find food, shelter, and breeding areas.

By managing flood flows downstream of the Friant Dam, the project indirectly helps protect the ecological health of the San Joaquin River system and supports endangered and threatened species in the area.

Identify ecological benefits expected to result from project implementation.

The implementation of the recharge pond project is expected to provide several ecological benefits:

1. Improved Groundwater Recharge: By capturing excess surface water, the recharge pond will help replenish groundwater levels, which supports the surrounding ecosystems, including wetlands and riparian habitats that rely on a stable water table.

2. Flood Mitigation: The recharge pond will help manage peak runoff and floodwaters, reducing the potential for downstream flooding. This can protect sensitive habitats and prevent the displacement of wildlife and aquatic species.

These benefits collectively contribute to the resilience and health of the local ecosystem, supporting both wildlife and plant species in the region.

Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

The proposed project does not specifically target the reduction of species listings or directly aim to improve species status. However, by increasing groundwater recharge and managing floodwaters, the project may offer indirect ecological benefits. These benefits could include improved habitat stability and water availability, which may create more favorable conditions for certain species.

Sub-criterion B.3.c – Other Benefits

Will the project benefit multiple sectors and/or users?

Yes, the project will benefit multiple sectors and users by improving water supply reliability across agricultural, municipal, and industrial sectors. By facilitating the conveyance of wet-year surface water from the Friant-Kern Canal (FKC) for groundwater recharge, the project will support a broad range of stakeholders.

In the agricultural sector, District landowners and other agricultural water users will benefit from increased groundwater availability, particularly during drought periods, ensuring a stable water supply for irrigation. This reliability is critical in safeguarding crops from failure and protecting the local economy from the impacts of extreme droughts driven by climate change.

For the municipal and industrial sectors, the project will directly benefit two rural disadvantaged communities (DACs), which include several industrial processing facilities that rely solely on groundwater. By enhancing groundwater recharge, the project helps secure water resources for these facilities, as well as for local drinking water, recreation, and environmental uses. Increased groundwater recharge also provides greater operational flexibility for surface water deliveries, making the entire water management system more resilient and adaptable.

Will the project benefit a larger initiative to address sustainability?

Yes, the project will benefit the Sustainable Groundwater Management Act (SGMA), a California state-wide initiative that prioritizes sustainable groundwater management. SGMA was implemented to achieve groundwater sustainability by planning and building projects to resolve the challenge of over pumping and declining groundwater levels. The proposed Project focuses on enhancing conveyance to recharge and increasing recharge capacity, directly aligning with SGMA objectives. Increasing groundwater recharge is a critical element in maintaining and restoring groundwater levels. By directing more surface water to recharge basins during wet years, the project will increase the rate of which groundwater is replenished.

SGMA seeks to sustainably balance groundwater recharge and extraction. By increasing capacity to recharge facilities, the project contributes directly to this goal and is a valuable component of a comprehensive strategy to meet SGMA's sustainability goals and secure the long-term viability of groundwater resources.

Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

SSJMUD operates in the Kern Subbasin, classified as critically over drafted under SGMA law. This law directly relates to the sustainability of the groundwater basin, potentially leading to water-related crises or conflicts. To address this, the district, alongside others in the subbasin, established a Groundwater Sustainability Agency (GSA) and implemented a basin-wide GSP representative of SSJMUD, other district GSAs, and non-district GSA areas in the Kern Subbasin.

The plan aims to alleviate groundwater overdraft issues and achieve sustainability by 2040. SSJMUD is currently implementing the Kern GSP in compliance with SGMA and implementing projects that provide supplemental water that will directly support the GSP's project and management actions included for the District.

1.5.3 Evaluation Criterion C – Planning and Preparedness

Plan Description and Objective

Is your proposed project supported by a specific planning document?

Yes. The Woollomes Avenue Recharge Project is supported by the Poso Creek IRWM Region Drought Contingency Plan (DCP, Plan) because the project addresses the Plan's main objectives. The DCP highlights drought vulnerabilities in the region and seeks to identify mitigation actions to promote long-term drought resiliency of the region. The proposed project addresses the DCP's main goals to (1) enhance reliability and effectiveness of surface water supplies delivered to the region, (2) improve regional water conveyance, direct recharge, and in-lieu service actions, and (3) enhance regional conjunctive water use.

When was the plan developed? How often is it updated?

SSJMUD is member of the Poso Creek IRWM Group (Group). The Group entered into an agreement with Reclamation in 2019 to develop a DCP. The Plan was developed and finalized in October 2022, with adoption of the Plan in February 2023. The DCP will be updated on a regular basis at least every 5 years to examine, evaluate, and accurately describe the current vulnerabilities in the region.

What is the purpose and objective of the plan?

The purpose of the DCP is to expand and coordinate existing long-term drought planning efforts to improve future drought monitoring and response strategies to build long-term resiliency to drought. The Plan is intended to assist member agencies with recognizing early stages of drought, understanding the impacts of drought vulnerabilities in the region, and identifying mitigation and response actions to drought. The proposed mitigation and response actions were developed to address the objectives shown in Table 4.

Table 4. Drought Plan Objectives

Objectives
○ Enhance reliability and effectiveness of surface water supplies delivered to the region
○ Enhance reliability and effectiveness of surface water supplies delivered to the region
○ Improve regional water conveyance, direct recharge, and in-lieu service actions
○ Improve effectiveness of water delivery
○ Improve direct recharge areas
○ Improve reliability of delivering water supplies to stakeholders

○ Implement region-wide management actions
○ Enhance regional conjunctive water use
○ Maintain quality of water supply.
○ Facilitate implementation of regional opportunities, projects, and programs
○ Facilitate implementation of region-wide water management actions
○ Adapt to change in amount, intensity, timing, and in-lieu service areas
○ Increase absorptive capacity for banking water when available

What is the geographic scope of the plan?

The Plan covers the entire Poso Creek IRWM including all Regional Water Management Group (RWMG) agencies (or districts), cities, and communities. The RWMG agencies are shown in Table 5. The RWMG service areas encompass approximately 934 square miles, which covers numerous cities and communities. The cities that are included within the service areas are: Cities of Shafter, Wasco, McFarland, Delano, and Lost Hills; the community of Richgrove Community Services District is also included.

Table 5. Poso Creek RWMG Member Agencies

Member agencies	
Semitropic Water Storage District (SWSD)	North Kern Water Storage District (NKWSD)
Cawelo Water District (CWD)	Shafter-Wasco Irrigation District (SWID)
Kern-Tulare Water District (KTWD)	Delano-Earlimart Irrigation District (DEID)
North West Kern Resource Conservation District (NWKRCD)	Southern San Joaquin Municipal Utility District (SSJMUD)

Explain how the applicable plan addresses drought.

The DCP identifies and implements strategies that monitor short and long-term water availability; assesses risks to critical resources in the case of drought; promotes mitigation efforts; prioritizes wet and drought response actions; ensures that administrative framework and associated responsibilities are clear and transparent; and provides for periodic evaluation for updating the Plan.

The DCP assesses current and future drought conditions in the region and promotes better management of the water resources and to mitigate the effects of future drought while accounting for future effects of climate change. The Plan describes developed mitigation actions including enhancing conveyance, expanding recharge capacities, and increasing storage of surplus supplies to address drought vulnerabilities caused by climate change. These mitigation actions aim to increase operational flexibility, reduce reliance on groundwater, and encourage better water management to build long-term drought resilience.

Describe the plan's drought-focused elements.

The DCP includes sections on drought monitoring, vulnerability assessment, mitigation actions, and response actions. Within the plan, Drought Monitoring describes the drought severity level of the Poso Creek Region by assessing three factors: (1) projections of water supply allocations for various sources in the region such as the CVP, which Group members rely on for surface supplies, (2) minimum thresholds for groundwater level conditions as established in the SGMA, and (3) available drought forecasting of hydrologic conditions to define four drought stages. The Vulnerability Assessment evaluates risk and impact of drought to a list of drought vulnerabilities by assessing the availability and reliability of regional water resources, prioritizing critical resources, assessing regional water demand, and considering water quality conditions. The assessment also includes a climate assessment on future conditions of the region's water supplies based on projected climate change. Mitigation and Response actions to drought were developed and identified for each District in the Poso Creek Region.

Plan Development Process

Was the plan(s) developed through a collaborative process? Who was involved in developing the plan?

Yes. The Poso Creek DCP was developed in collaboration with other members of the RWMG as listed in Table 5. Planning of the DCP occurred in two phases in accordance with USBR's Drought Response Program Framework (Framework). During Phase I of the Planning Process, a Drought Task Force, led by SWID, consisting of Poso Creek RWMG members including SSJMUD (*see* Table 5), and various stakeholders, consultants, and subject matter experts was developed. During Phase II, the Task Force developed the Final DCP and carried out action developed under the Communication and Outreach (C&O) Plan. The RWMG served as the Interim Task Force until a more representative group was established after March 2020 including Lost Hills Utility District, Santa Clara Valley Water District, City of Wasco, Milk Producers Council, Maricopa Orchards, and Illume Agriculture. A representative from Provost and Pritchard, the Kern IRWM Facilitator, was also involved in the Task Force.

The Task Force developed and approved the work plan for development of the DCP, evaluated the components of the Plan, and developed mitigation and response actions to address drought in the region. The Task Force also held meetings during the Poso Creek RWMG meetings to discuss the progress of the Drought Plan development, coordinate with stakeholders and the public through the planning process and receive feedback on the Plan. The Task Force made the key decision to adopt the final DCP. The RWMG, including Districts and DACs, is responsible for the development of future updates to the plan. Engineering consultants were also involved in preparing the Plan with input and data provided by the Task Force members.

Was the plan prepared with input from stakeholders with diverse interests? Describe the process for interested stakeholders to provide input during the development of the plan.

Yes. The C&O Plan identified a plan to conduct stakeholder meetings and included public/stakeholder input for work to be conducted under the DCP. The goals of the C&O Plan were to educate the public on the DCP, include their stakeholder participation, engage with a diverse group of stakeholders, provide easy and accessible outlets for participation, and provide a roadmap for RWMG to engage with stakeholders. Notification of the meeting opportunities were sent via email to all interested parties. Two public workshops were held for members of the public and stakeholders interested in the DCP to provide input on the development of the Plan. Stakeholders were encouraged to provide feedback in-person or online and were also given the opportunity to participate in Task Force meetings held by the RWMG for information on the development and implementation of the DCP. The materials presented in the meetings were available for additional public review after the meeting. Additional informational and explanatory materials were also available to stakeholders for review if they indicated that they would like to receive the materials.

If the plan was prepared by an entity other than the applicant, describe whether and how the applicant was involved in the development of the plan or why they were not part of the planning process.

The Plan was prepared by an engineering consultant with input from the member agencies including the RWMG and various stakeholders. SSJMUD provided district information for development of the Plan, reviewed and provided feedback on the Drought Monitoring and Drought Stages of the DCP, and developed mitigation and response actions for their area based on the vulnerability assessment performed. As a member of the RWMG, SSJMUD was involved in the planning process including approval of the developed DCP workplan and development of the DCP.

Plan Support for Project

Does the plan identify the proposed project by name and location as a potential mitigation or water management action?

The DCP identifies a mitigation action for In-District Spreading Grounds consisting of multiple potential groundwater recharge sites throughout the District. Although the proposed project is not specifically called out by name and location, this identified mitigation action describes the benefits of the project, which consists of conveyance to proposed recharge ponds.

Explain how the proposed project was prioritized in the plan over other potential projects/measures.

The District has focused on implementation of projects that improve groundwater recharge capacity to support regional efforts for groundwater sustainability and replenishment of the local groundwater aquifer. The proposed project addresses a high priority need of the DCP to prepare for future drought conditions by storing available water supplies for later beneficial use. The project provides benefits to the District, region, and the local community. Similar recharge projects in the DCP's mitigation actions for the District are noted with a high priority level indicating that they are prioritized in the Plan.

If the proposed project is not specifically identified in the plan, does implementing the proposed project achieve a goal or need identified in the plan? Is the supported goal or need prioritized within the plan? If so, how is it prioritized?

The proposed project achieves the goal of the Plan to maximize the region's capacity to recharge and bank water locally during wet periods. Given the concern of extended, more severe drought periods, the DCP prioritizes the capture and recharge of surplus wet year water supplies into the local aquifer during the Surplus Condition Stage. This drought monitoring stage is defined as the most critical stage as it provides additional storage and recharge of groundwater supplies in preparation for future drought conditions.

1.5.4 Evaluation Criterion D – Readiness to Proceed and Project Implementation

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates for completing the project within the applicable timeframe.

The Project will be implemented under the direction of District Manager, Roland Gross, with an engineering consultant firm providing support for design, bidding, construction management and administration, reporting, and coordination with local firms as needed. Operations Manager, John Bonkosky, will be responsible for overall project management and oversight.

The Project will be executed through a series of tasks and milestones, which are detailed below. These tasks are designed to ensure efficient progress and are directly tied to the corresponding Budget and Schedule items. Table 6 presents a Schedule that outlines the estimated phases and milestones for the Project's completion. The projected timelines for each task are informed by previous engineering experience, ensuring the schedule is both practical and attainable.

Task 1: Grant Administration - This involves the coordination of all project activities, including budget management, schedule oversight, communication, and the administration of both grant and cost-share components. Responsibilities include preparing invoices and maintaining financial records. Grant administration will take place from the grant award to construction completion, spanning approximately two years.

Task 2: Grant Reporting - Financial reports on the Project will be submitted semiannually over the two-year project period. A final project report will be prepared upon completion.

Task 3: Environmental Documentation and Regulatory Compliance – CEQA and NEPA documentation will be prepared for the project. Based on past experience with similar recharge projects in the area, an estimated duration of 6 months is anticipated for this process.

Task 4: Permits and Approvals -The District anticipates that all construction will take place within the boundaries of its property and, therefore, will not be subject to the County's or City's jurisdiction regarding building and grading permits for water resource projects. However, coordination with any external agencies or landowners, if necessary, will be conducted to ensure full compliance with applicable laws and regulations, facilitating a smooth and uninterrupted construction process.

Task 5: Project Design – The District has developed a preliminary design layout for the proposed project. The final design will be completed based on a detailed survey of the site, including slope and elevation data. A 60% design will be developed first, followed by the final design. An estimated timeframe of approximately 6 months is allotted to finalize the design and prepare it for construction.

Task 6: Project Bidding - Once the design is finalized and all necessary environmental documentation and permits are secured, SSJMUD, in collaboration with the Engineering Consultants, will oversee the project bidding process. This process will include a contract advertisement period of at least 10 days, followed by 30 days for contractors to submit their bids. After that, approximately one month will be allocated for the selection and awarding of the contract, with mobilization beginning within 10 days after the notice to proceed. Key steps in the bidding process include publishing the bid solicitation notice, conducting a job-site tour for prospective bidders, addressing contractor questions, issuing addenda as necessary, evaluating submitted bids, verifying bidder qualifications, and ultimately awarding the contract to the selected contractor.

Task 7: Construction

Upon contract award, the contractor will begin construction activities, which will include mobilization and demobilization, grading and excavation, levee embankment construction, aggregate base surfacing, installation of interbasin structures, pipeline connections, turnouts, and inlets. This task is estimated to take approximately one year, based on the timeline of a similar recharge basin project.

Task 8: Construction Management and Administration – This task covers all aspects of construction management, from advertising for bids to filing the Notice of Completion and reviewing "As-Built" drawings. Construction management activities will include field observation and contract administration, which encompasses issuing the Notice to Proceed, holding pre-construction conferences, reviewing contractor submittals, handling progress payments, holding periodic meetings, managing contract change orders, and ensuring proper project documentation. Construction management spans the entire project, from the start of bidding to the completion of the project and final closeout.

Table 6. Project Schedule/Milestones

Milestone	Planned Start Date	Planned Completion Date	Duration (months)
Signed Agreement	September 2025	September 2025	1
Task 1- Grant Administration	September 2025	May 2027	20
Task 2- Grant Reporting	September 2025	September 2027	24
Task 3- Project Design	September 2025	March 2026	6
Task 4- Environmental Compliance	November 2025	November 2026	12
Task 5- Permits and Approvals	November 2025	April 2026	5
Task 6- Project Bidding	April 2026	June 2026	2
Task 8- Construction	June 2026	June 2027	12
Task 7- Construction Management and Administration	April 2026	June 2027	15

Describe any permits or approvals that will be required.

The District will engage Reclamation and local agencies to comply with all laws, rules, ordinances and regulations of all governing bodies having jurisdiction over the work, obtain all necessary permits and licenses. This would include, but is not limited to

a) NPDES permitting and the preparation of a Storm Water Pollution Prevention Plan for construction of the Project.
b) A pre-activity survey

Note that the District is not subject to the County's or City's jurisdiction about building and grading permits relative to water resource projects. Accordingly, no city or County-issued permits will be required.

Identify and describe any engineering or design work performed specifically in support of the proposed project.

The District has contracted an engineering design consultant to provide the necessary design work for the project. This includes designing the recharge basin ponds, levees, inlet structures, flow meters, and turnouts, which are essential for managing water flow and distribution.

The consultant has completed the initial 30% design phase, which establishes a conceptual framework and general layout for the project components. At 30% design, basic dimensions, material selections, and preliminary engineering cost estimate are provided.

Following the 30% design, the consultant will continue with a 60% design phase. During this stage, the designs will provide detailed engineering calculations, additional design elements, and refined cost estimate. This phase includes the identification of utility locations, more precise material estimates, and preliminary construction planning.

The final design phase will be completed after a detailed survey of the project site is conducted. The final design includes full construction drawings, technical specifications, and complete cost estimates, ensuring that all components are ready for bidding and construction. Once this phase is complete, the project is fully prepared for execution.

Describe any land purchases that must occur before the project can be implemented, and the status of the purchase.

The project site parcels were purchased by the District in March 2024. No additional land purchases are required before the project can be implemented, as the necessary parcels have already been secured.

If the project is completely or partially located on Federal land or at a Federal facility, explain whether the agency supports the project and has granted access to the Federal land or facility, whether the agency will contribute toward the project, and why the Federal agency is not completing the project?

No, the project is not located on Federal land or at a Federal facility. Therefore, there is no need for agency support, access grants, or Federal agency involvement in the completion or contribution to the project.

Describe any new policies or administrative actions required to implement the project.

The recharge facility will be located on District-owned land. Therefore, no new policies or administrative actions are required to implement the project. All necessary approvals and land ownership arrangements are already in place.

1.5.5 Evaluation Criterion E – Presidential Priorities

Benefits for Disadvantaged Communities

If applicable, describe how the proposed project will directly serve and/or benefit a disadvantaged community.

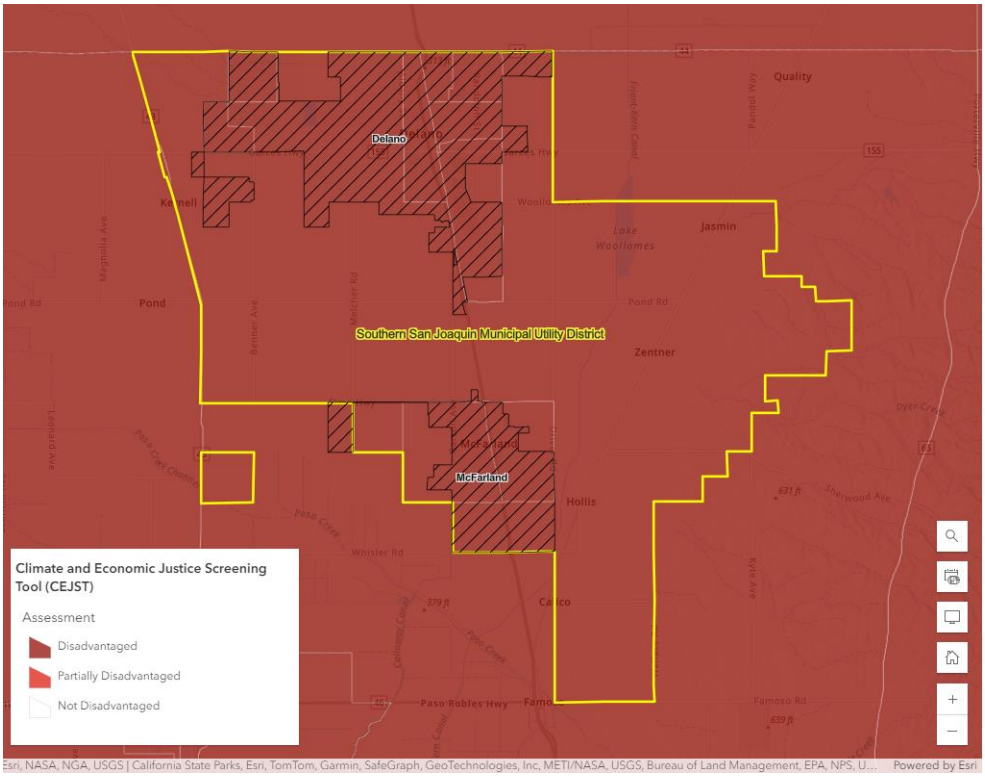


Figure 7: CEJST Disadvantaged Area Map of Delano, McFarland, and District Boundaries

The proposed project will directly benefit the adjacent disadvantaged communities, particularly the Cities of Delano and McFarland, by addressing critical groundwater management issues in the region. Both cities, which depend heavily on groundwater from the Kern Subbasin, are identified as "overburdened and underserved" by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST). As seen in Figure 7, the entire area of the district, both incorporated and unincorporated, is classified as disadvantaged.

According to CEJST data, the City of Delano faces significant challenges, including high energy costs (54th percentile), poor air quality due to PM2.5 (99th percentile), and proximity to hazardous waste facilities (62nd percentile). Workforce challenges like high unemployment (92nd percentile) and linguistic isolation (98th percentile) further contribute to the area's disadvantaged status.

Similarly, CEJST data shows that McFarland faces high energy costs (78th percentile), poor air quality (99th percentile for PM2.5), and limited green space (93rd percentile), along with severe

transportation barriers (93rd percentile) and high poverty (93rd percentile). The area also struggles with high unemployment (91st percentile) and significant linguistic isolation (99th percentile). These challenges make groundwater sustainability a critical concern for McFarland residents.

In these communities, decreases in groundwater levels typically lead to increased pumping costs as water must be extracted from greater depths. This results in higher energy consumption and elevated operational expenses, including the need for repairs and more powerful pumps. The financial burden on landowners, many of whom are low-income residents reliant on well water, increases significantly as groundwater resources become more strained.

The Woollomes Avenue Recharge Project's focus on groundwater banking and the increased importation of surface water for direct recharge and agricultural use will help stabilize groundwater levels, reduce extraction costs, and improve overall groundwater quality. By improving groundwater sustainability, the project supports a more secure and reliable water supply, which is critical for the community's resilience, especially during droughts. The Cities of Delano and McFarland are key stakeholders in the project. Appendix B provides letters of support, recognizing the project's potential to enhance water security and contribute to the long-term environmental and economic well-being of their communities.

1.5.6 Evaluation Criterion F – Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity.

The proposed project is in the Southern San Joaquin Municipal Utility District, which is a CVP-Friant Contractor. SSJMUD receives contract supplies from the Reclamation via conveyance from the Friant-Kern Canal. When surface water is available in wet periods from the FKC, it will be conveyed to this Project for groundwater recharge.

Does the applicant have a water service, repayment, or O&M contract with Reclamation? If so, please provide the contract number(s).

Yes. According to the 2020 SSJMUD AWMP, the District was formed in 1945 for the purpose of entering a contract for purchase and distribution of Class 1 and Class 2 water from the CVP Friant Division. This CVP contract (Irl-1460D) conveys year-round surface water supplies through the FKC for agricultural use in the amounts of 97,000 AF for Class 1 water and 45,000 AF for Class 2 water.

Will the proposed project benefit a Reclamation project area or activity?

Yes. The proposed project will increase recharge capacity to the District through the proposed conveyance route from the FKC. As such, the project will benefit Reclamation's flood control management by redirecting uncontrolled, unscheduled flood releases off the FKC into the

proposed recharge ponds for groundwater recharge. As a result of excessive groundwater extraction, the FKC's conveyance capacity has significantly declined leading to less reliable deliveries of surface water through the conveyance system. Implementation of the project aims to increase groundwater sustainability as a means to mitigate subsidence along the FKC, which benefits all other Friant CVP contractors.

Is the applicant a Tribe?

No, the applicant is a municipal utility district.

1.5.7 Evaluation Criterion G – Stakeholder Support for Proposed Project

Describe the level of stakeholder support for the proposed project. Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project?

The District is a member of the Poso Creek IRWM Group, which includes multiple neighboring water districts in Kern County. The proposed project is critical for improving the efficient delivery of surface water to a recharge basin, thereby enhancing operational flexibility and efficiency in the region. The project aligns with the objectives of the IRWM Group, which emphasizes integrated planning for regional sustainability. The Poso Creek IRWM Group has provided a Letter of Support, included in Appendix B, endorsing the project.

Additionally, the City of Delano and the City of McFarland are key stakeholders supporting the project due to its positive impact on groundwater sustainability, which is crucial for their communities that rely heavily on groundwater. The project will increase recharge capacity, leading to supplemental groundwater supplies, providing a more secure and reliable water source for residents and enhancing drought resilience. The objectives of the project align with the interests of both the agricultural and municipal sectors. A Letter of Support from the City of Delano and City of McFarland are included advocating for the project, Appendix B.

No other stakeholders are providing direct cost-share contributions. The District is the sole contributor to the project's funding.

1.6 Performance Measures

All deliveries of water into SSJMUD are measured at FKC delivery points using flowmeters. These meters are equipped with totalizers, a flow accumulation measurement device, periodically checked for measurement accuracy as part of the District's routine maintenance program. When properly installed and calibrated, flowmeters with a totalizer provide an accurate method of measuring both the instantaneous flowrate at any given time and the total volume of water delivered to the District's system during a period of operation. By measuring the volume of water delivered through the turnout, the total volume of water recharged to the groundwater system contributing to sustainability will be monitored and reported annually.

2. Project Budget

The mandatory Budget Narrative and Budget Detail are uploaded into Grants.gov with the submission of this application. A summary of Non-Federal and Federal Funding Sources is shown in Table 7.

Table 7. Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	**$3,417,900**
1. Southern San Joaquin Utility District	$3,417,900
Requested Reclamation Funding	**$3,000,000**
Total Project Funding:	***$6,417,900***

3. Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts, as well as any other past, present, or reasonably foreseeable future developments that you are aware of that will affect these same resources in the surrounding area.

The extent of construction activities (footprint) for the Project is within land owned by SSJMUD. The proposed recharge facility is on previously disturbed soils, located on land that has vines recently removed from under cultivation. Regardless, all applicable environmental compliance measures will be followed, to ensure no improper disturbances are made to the environment and animal life. Such environmental measures include executing the PM-10 Dust Control Prevention Plan, Storm Water Pollution Prevention Plan, and all necessary biological site surveys and avoidance and minimization measures.

Best Management Practices (BMPs) will be implemented during construction to mitigate any construction related impacts. Dust-control measures will be implemented during earth-disturbing activities, including the application of water to prevent excessive dust during all clearing, grading and earthmoving. During grading and construction activities, all equipment will be powered down when not in use to reduce unnecessary emissions, all equipment will be maintained and tuned, and to the extent possible, all equipment will be equipped with exhaust systems to minimize emissions, and speeds will be limited on unpaved roads and traffic areas. Additionally, wind barriers will be implemented as needed, and if high winds occur, ground disturbing activities will cease.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

No, activities will not affect species which are endangered or threatened. The District is aware that threatened and endangered species are present in Kern County, as identified by the Fish and Wildlife Service (FWS) Endangered Species Database. However, based on the District's experience, the Kern Council of Governments Habitat Conservation map, and federally listed species mapping, there are no known occurrences of endangered species within the area of the proposed recharge basin. To confirm this, a biological survey will be conducted prior to construction to ensure that no federally listed species or their designated critical habitat will be impacted by the project.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.

No, the project is within previously disturbed agricultural land and is not connected to any surface waters that potentially fall under CWA jurisdiction as "Waters of the United States." Therefore, there are no anticipated impacts on such waters.

When was the water delivery system constructed?

The District was formally organized in 1935. In 1945, the Board of Directors of the SSJMUD executed a contract with the United States providing for Class I and Class II water service contract via the CVP. The SSJMUD delivery system is primarily a gravity system including some pressurized pipe system which receives water from nine turnouts from the FKC and delivers the water to growers in the District. The original 158 miles of pipelines (of the current 175 miles) within the district were completed in the early 1950's. There are nine turnouts into the District which are metered using propeller meters with totalizers.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No, the proposed project will not result in extensive modifications to the existing irrigation distribution system. The only change will be the installation of a meter at the point of delivery into the spreading ground. There are no plans for alterations to other features such as headgates, canals, or flumes.

Are any buildings, structures, or features in the project area listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No, the selected site area does not have existing buildings or structures. The District will contract with a private cultural resources management consultant and arrange for Reclamation staff to coordinate to determine if any previous cultural resources surveys have been conducted in the project area.

Are there any known archeological sites in the proposed project area?

No. The project location is on previously disturbed land, it is expected that there will be no obstacles to receipt of clearance with respect to archeological sites. In addition, the District is prepared to implement any necessary mitigation measures should cultural resources be identified by the private cultural resource's management consultant.

Will the proposed project have an adverse and disproportionate effect on communities with environmental justice concerns (as discussed in E.O. 14096)?

No. Construction of the project will support the important agricultural-based economy in the Southern San Joaquin Valley and should have only positive impacts on low income or minority persons living in the region.

Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?

No.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No.

Budget Narrative

The total Project budget for the Caratan Recharge Facility (Project) is estimated at $6,417,900 with $3,000,000 in requested grant funds (Federal Cost Share) and $3,417,900 in Non-Federal Cost Share funds. The approach has been reflected in the budget estimates. The total requested grant funds amount to about 47 percent of total project costs, with the remainder (53 percent) funded by the Applicant.

The following section describes the budget items identified in the Budget Proposal and the basis of which each amount was determined.

a. Salaries and Wages

Salaries and Wages of District staff are not factored into the Budget Proposal. Any time spent by District personnel in support of the Project will be covered as part of their district responsibilities, accounted for internally, and not invoiced to the Project.

b. Fringe Benefits

No Fringe Benefits are included in the Budget Proposal.

c. Travel

No Travel is included in the Budget Proposal.

d. Equipment

No Equipment is included in the Budget Proposal.

e. Supplies

No Supplies are included in the Budget Proposal.

f. Contractual

The contractual budget proposal consists of one engineering consultant contract.

Engineering Consultant
An engineering consultant will be hired to assist with project grant administration and grant reporting. For cost estimation purposes, it is assumed that the project will require a similar level of effort as past comparable recharge projects. A detailed hourly breakdown and cost basis for each task is provided in the Budget Detail uploaded onto Grants.gov.

- Grant Administration: This includes coordination of all project activities, such as budget management, scheduling, and collaboration with Reclamation, as well as cost administration.
- Grant Reporting: This involves preparing and submitting the required progress, final, and financial reports.

g. Construction

The construction budget proposal consists of two contracts: one for engineering consulting and one for the construction contract.

Engineering Consultant

The engineering consultant will be contracted for environmental/regulatory compliance, design, bidding, and construction management. For cost estimation purposes, it is assumed that the project will require a similar level of effort as past comparable projects. The Budget Detail uploaded onto Grants.gov provides a breakdown of the estimated hours and rates for each task by anticipated staff.

- Environmental and Regulatory Compliance: Coordination with Reclamation to prepare all necessary environmental documentation, based on the District's similar project, the Caratan Recharge Facility. CEQA and NEPA environmental compliance will be obtained by a consultant prior to any ground disturbance activities and is included in a separate contract.
- Project Permitting and Approval Processing: Involves preparing and compiling all necessary permit application documents, including forms, drawings, technical reports, and supporting documentation.
- Design Support: Completion of the 60% and final design, with the estimate based on SSJMUD's Regan Recharge Facility, recently completed in 2023.
- Construction Bidding: Involves the preparation of specifications and drawings, coordination of the bid process, bid proposal analysis, and contract award assistance, also based on Regan Recharge Facility bidding costs. Tasks include bid advertisement, pre-bid tours, agenda meeting minutes, addenda, bid opening, bid proposal analysis, and NOA/NOP.
- Construction Management: Includes oversight of construction activities and progress payment support, with costs covering time for weekly construction meetings, monthly pay applications, and field observations.

Construction Contract

A single "furnish and install" contract is anticipated to cover all construction elements, including mobilization, demobilization, water supply, pipeline conveyance installation, turnout connections, headgates and structures, materials and supplies, equipment, and the required construction-specific permits.

- Project-wide Items: The cost estimate for these items is based on bid abstracts from the Regan Recharge Facility, Caratan Recharge Project contract, and North Kern Water Storage District's NK-662-623 project contract, along with proposals from suppliers. This cost is deemed fair and reasonable as it is based on similar contracts awarded through a public, competitive bidding process. An Engineer's Opinion of Cost (EOPC) estimate was provided by an engineering consultant and is included in the Budget Detail.

***Other Construction-related Costs**:*
The budget includes costs for construction- related permits required by law such as PM-10 Dust Control Permit, and Kern County/Fish & Wildlife Permit. The estimate is based on the permitting costs for a similar project completed in 2023.

h. Other Expenses

No Other Expenses are included in the Budget Proposal.

i. Indirect Costs

No Indirect Costs are included in the Budget Proposal.

Appendix A – Drought Contingency Plan Excerpts

Drought Contingency Plan

Poso Creek IRWM Region

Kern County, CA

October 2022

4. Mitigation Actions

Mitigation actions have been developed through long-term, complementary drought planning efforts such as the Poso Creek IRWM Plan and SGMA GSPs. These efforts are expanded upon with input from the Drought Task Force, made up of the members of the Poso Creek RWMG and stakeholders. Actions also consider the risks and vulnerabilities to drought identified in Section 3 to successfully prepare for and mange for dry or drought periods. These actions are intended to build long-term drought resiliency and decrease critical resource sector vulnerabilities with the goal of reducing the need to implement Response Actions.

Implementation of projects involving conveyance improvements; infrastructure improvements; recharge and recovery facilities; and maintenance of water quality allow the region to increase operational flexibility, reduce reliance on groundwater supplies, and encourage better management of water, thereby leading to long-term drought resiliency. In addition to implementation-based projects, programs for monitoring on-farm efficiency have been developed and will provide an incentive for the region to develop additional mitigation actions in the future, which will enhance long-term drought resiliency.

4.1 Identification and Development of Mitigation Actions

As previously mentioned, mitigation actions have been developed through long-term efforts under IRWM and SGMA planning. Building on this collaborative process, Mitigation Actions have been developed to address drought vulnerabilities outlined in Section 3, **Table 3-1** and **Table 3-13**. Drought vulnerabilities are primarily driven by reliability of surface water supplies from outside the region. Therefore, mitigation actions have been developed to manage wet year surface supplies and are to be implemented during non-drought years to reduce effects during periods of drought or dry years. These actions are intended to assist the region in building resiliency and avoid crisis during drought by reducing risks posed to the previously identified vulnerabilities and minimize the need for response actions. Mitigation actions are intended to decrease sector vulnerabilities and reduce the need for response actions to help water managers build resiliency and avoid crisis during drought.

4.1.1 Mitigation Actions Objectives

The actions were developed by each District and supported by the Task Force to coordinate and consider the interest of the regional group. Mitigation actions developed by each member agency are intended to build long-term resiliency to drought, and mitigate risks posed by drought. The mitigation actions support the Drought Contingency Plan goals and objectives presented in Section 1, **Table 1-2** by addressing existing or potential risks associated with drought. Implementation of these actions will complement the Drought Plan Objectives. **Tables 4-3** and **4-4** provides a list of finalized mitigation actions that address these objectives.

4.1.2 Existing Programs, Policies, and Operational Criteria

An examination of existing programs and policies in the region was done to determine actions have been successful in promoting drought resiliency thus far and identifying areas where additional mitigation actions could be implemented. Currently, one of the districts in the region has the following Mitigation Actions in place with several districts considering similar actions:

- New Lands Surcharge program: Any new land developed after July 1, 2017, would be charged $500/AF of consumptive use greater than the allocated native groundwater yield.
- SGMA Basin Sustainability Charges/Credits: A program whereby the District utilizes remote sensing data to determine the consumptive use (as evapotranspiration or ET) for each parcel and the aggregate by Landowner of Record in the District.

Additionally, some Districts have begun implementing actions aimed at lowering groundwater dependance and increasing groundwater recharge capacity within the region. These projects include, but are not limited to:

- Land fallowing
- Banking water on behalf of the District
- Cap on third party banking obligations
- Expansion of District recharge facilities

4.2 Evaluation of Mitigation Actions

The identified mitigation actions complement the local GSP's project and management actions to improve water use in the region as part of SGMA requirements. These actions were evaluated and screened as potential mitigation actions for drought contingency planning. These actions will be evaluated on a regular basis with the coordination of the Task Force; at least every 5 to 7 years to ensure that the action reflect the current needs of the drought plan area.

4.2.1 Prioritization of Mitigation Actions

The following factors were considered to prioritize potential mitigation actions:

- Cost to benefit ratio and likelihood of funding support
- Feasibility and ability to implement
- Sensitivity to environmental conditions
- Agency/agencies involved in implementing the measure
- Timeframe of the measure (short-, mid-, long-term)

Although all mitigation actions were evaluated, any actions that contained undesirable attributes, costs, or requirements were deprioritized to narrow in on the ideal mitigation actions for the region. Districts have prioritized projects, which can be identified by the year of initiation in Table 4-3.

4.2.2 Implementation of Mitigation Actions

Prior to initiation of mitigation actions, the RWMG member agencies and communities will research potential funding opportunities to support implementation of projects and programs within their respective planning area.

For member agencies, mitigation actions will be funded through district level funding or / and grant funding. If funding is received, the proposed action will be partially funded with an expected cost match of at least 50 percent; otherwise, the action will be fully funded at the district level. After a funding source is identified, implementation of a mitigation actions is initiated based on the need for the project or program. Then the entities will inform the public of the planned mitigation actions to be implemented.

Table 4-1 provides a list of known grant opportunities that encourage short-term and long-term drought relief and recovery that the RWMG member agencies have received in the past:

Table 4-1. Drought Relief and Recovery Programs for Water Districts

Agency	Grant
U.S Bureau of Reclamation	• WATERSMART Drought Response Program; Drought Resiliency Projects • WATERSMART Water and Efficiency Grants • WATERSMART Drought Resiliency Program • Bay-Delta Restoration Program: CalFED Water Use Efficiency Grants
Department of Water Resources	• Sustainable Groundwater Management Program • Proposition 1- Groundwater Sustainability: ▪ Agricultural Water Use Efficiency Grants ▪ IRWM Grants • Proposition 68- Regional Sustainability for Drought and Groundwater, and Water Recycling

Under various grants such as the DWR Prop 1 IRWM Grant and Prop 68 Grants, DAC projects will be fully funded through financial assistance opportunities to allow them to implement necessary mitigation actions. After securing a funding source, the DACs will initiate the mitigation actions and inform the public of the actions that they are implementing. Some DACs located within member agency boundaries may also receive support from the agency.

Table 4-2 The following are a list of known Grant opportunities that encourage short-term and long-term drought relief and recovery that the DACs have received in the past:

Table 4-2. Drought Relief and Recovery Programs for DACs

Agency	Grant
State Water Resources Control Board	• Safe and Affordable Funding for Equity and Resiliency (SAFER) • Cleanup and Abatement Account Funding Program • One-Time General Fund Appropriation – Assembly Bill 72 • Drinking Water State Revolving Fund
Department of Water Resources	• Proposition 1- Groundwater Grant Program ▪ IRWM Grants – DAC projects ▪ Stormwater Grants ▪ Small Community Wastewater • Proposition 68- Groundwater Treatment and Remediation Grant ▪ DAC Drinking Water Projects
Administered by Self-Help Enterprises (SHE) and Rural Community Assistance Corporation (RCAC)	• Drinking Water Well Replacement Program

Mitigation actions will be updated through an on-going basis. In addition, a periodic evaluation of the process used to develop these actions will be done to determine the effectiveness of the Drought Contingency Plan. Further discussion on updates to the elements of the Drought Contingency Plan are described in Section 6.

The following tables provides a detailed list of mitigation actions developed for each RWMG member agency (**Table 4-3**) and community (**Table 4-4**) within the Poso Creek Region with a brief description of each action, implementation status, timetable, and expected benefits by each entity and priority level. The listed benefits correspond with the drought plan's goals and objectives. These tables also include schedule for implementation. Since DACs often rely on grant funding, timeline for project implementation is unknown and will occur with as funding becomes available.

Mitigation Actions	District/Entity	Type	Type of Project/Program	Purpose and Brief Description	Priority Level	Status	Timetable for Initiation	Timetable for Completion	Benefits to Drought Planning Objectives
Schuster Spreading Grounds	SWSD	Project	Improved Groundwater Recharge Capacity	Development of spreading facilities to increase groundwater recharge capacity.	Medium	Conceptual	2030	2035	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Implement regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
Multi-District Conveyance (CA to Friant-Kern Canal)	SWSD	Project	Improved Groundwater Recharge Capacity	Development of a conveyance system to deliver surface water for groundwater recharge and irrigation.	Medium	Ongoing	2022	TBD	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Implement regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
“Surface Water First” Incentive Program	SSJMUD	Program	Supplemental Surface Water Supplies	Implementation of fees for groundwater use when surface water is available.	Medium	Conceptual	2023	TBD	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions

Mitigation Actions	District/Entity	Type	Type of Project/Program	Purpose and Brief Description	Priority Level	Status	Timetable for Initiation	Timetable for Completion	Benefits to Drought Planning Objectives
									• Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
City of Delano Spreading Grounds	SSJMUD	Project	Improved Groundwater Recharge Capacity	Improvements to existing 16-acre stormwater retention basin for use as a spreading basin. Improvement to adjacent 32-acre site for expansion of spreading grounds.	High	Initiated	2020	2023	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
In-District Spreading and Recovery Facility	SSJMUD	Project	Improved Groundwater Recharge Capacity	80-acre spreading ponds and 2 recovery wells.	High	Initiated	2020	2023	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
Schuster Intertie	SSJMUD	Project	Improved Conveyance Capacity	Construction of pipeline between Semitropic and SSJMUD to provide operational flexibility and allow SSJMUD to import water supplies to the Subbasin.	High	Conceptual	2023	2025	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs

Mitigation Actions	District/Entity	Type	Type of Project/Program	Purpose and Brief Description	Priority Level	Status	Timetable for Initiation	Timetable for Completion	Benefits to Drought Planning Objectives
									• Implement region-wide management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
SSJMUD & NKWSD Intertie	SSJMUD	Project	Improved Conveyance Capacity	Construction of a pipeline between Cawelo and SSJMUD to provide operational flexibility and allow SSJMUD to import supplies to the Subbasin.	High	Initiated	2023	2025	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implementation of region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
Southeast Delano Spreading Grounds	SSJMUD	Project	Improved Groundwater Recharge Capacity	Conversion of land to permanent spreading grounds, up to 320 acres, to facilitate groundwater recharge in proximity to the City of Delano to the benefit of both the District and the City.	High	Initiated	2023	2025	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.

Mitigation Actions	District/Entity	Type	Type of Project/Program	Purpose and Brief Description	Priority Level	Status	Timetable for Initiation	Timetable for Completion	Benefits to Drought Planning Objectives
Pond Road Spreading Grounds	SSJMUD	Project	Improved Groundwater Recharge Capacity	Conversion of land to permanent spreading grounds, up to 220 acres in proximity to the FKC, to capture and utilize excess surface water deliveries.	High	Conceptual	2023	2025	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
On-Farm Efficiency/Deficit Irrigation Practices Incentive Program	SSJMUD	Program	Demand Management Actions	Improvements to individual farming operations that address water use efficiency and/or groundwater protection through incentive programs.	High	Conceptual	2023	2025	• Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
In-District Spreading Grounds	SSJMUD	Project	Improved Groundwater Recharge Capacity	Conversion of land to permanent spreading grounds, up to 800 acres, to facilitate groundwater recharge. This project would consist of multiple locations throughout SSJMUD identified as potential recharge sites.	High	Conceptual	2023	2030	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.

Mitigation Actions	District/Entity	Type	Type of Project/Program	Purpose and Brief Description	Priority Level	Status	Timetable for Initiation	Timetable for Completion	Benefits to Drought Planning Objectives
Conversion of Dairy to Recharge Facility	SSJMUD	Project	Improved Groundwater Recharge Capacity	Conversion of land previously used for dairy operations into permanent recharge facilities.	Medium	Conceptual	2023	2030	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Increase absorptive capacity within the Region • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
SSJMUD & Cawelo WD Intertie	SSJMUD	Project	Improved Conveyance Capacity	Construction of a pipeline between Cawelo and SSJMUD to provide operational flexibility and allow SSJMUD to import supplies to the Subbasin.	Medium	Conceptual	2024	2026	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Implementation of region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.
Conversion of Agricultural Land to Urban Use	SSJMUD	Project	Demand Management Actions	Conversion of agricultural land to urban use within the limits of each city to reduce groundwater use due to decreased demand.	Medium	Ongoing	Ongoing	TBD	• Implement region-wide water management actions • Adapt to changes in the amount, intensity, timing, quality, and variability of runoff and recharge.

5. Response Actions

Response Actions are typically implemented when a specific stage of drought is reached, or other outside factors result in a needed action. Response actions are intended to reduce the severity of immediate impacts of drought and manage limited water supply. These actions are distinct from mitigation actions, which do not have defined metrics or triggers.

5.1 Development of Response Actions

As previously stated, response actions are triggered when specific drought stages are reached. Initially these actions were developed by checking available information such as local water contingency plans in the area. This involved long-term drought planning through the development IRWM Plan and SGMA GSPs. Corresponding response actions were further developed once the triggers and goals of specific drought stages were clearly defined.

5.1.1 Defined Triggers based on Existing Conditions

As stated in the drought monitoring section, the metrics critical for drought response actions and regional water management include: (1) decreases in surface water allocations, and (2) decreases in groundwater levels. The data collected from annual forecast modeling for the SWP, CVP, and Kern River allows the district to manage water supplies within the drought plan area.

Triggers and metrics for each drought planning stage are clearly defined in **Tables 2-2** through **2-5** for the Surplus Condition Stage and the three Drought Stages.

5.1.2 Identification of Response Actions

The region has developed the following response actions, with input from the Task Force, for surplus conditions and drought periods where surface water supplies drop below normal levels. These response actions are listed in Table 5-1 below.

Table 5-1. Surplus Condition Response

Wet Year Response Action	Description
Water Banking Activities	Banking of surplus imported surface water deliveries per the availability and capacities available to RWMG Member agencies. Drought Task Force with engage to assist in the coordination of conveyance and recharge activities to maximize the recharge of available supplies.
Water Transfers and Supplemental Surface Water	Participation in additional water transfers or supplemental surface water programs. Drought Task Force with engage to assist in the coordination of conveyance and transfer of available supplies.

Table 5-2. Dry Year Response Actions

Public Education and Outreach	Notification of voluntary conservation and water use reduction through website, public meetings, and email and postal service mailing	Stage 1 through 3
Prorating of Water Deliveries	Prorating of water deliveries based on available supplies	Stage 1 through 3
Water Transfers and Supplemental Surface Water	Participation in additional water transfers or supplemental surface water programs	Stage 1 through 2
Water Banking Activities	Recovery of banked water from banking partners	Stage 1 through 3
Request Disaster Relief	Request disaster relief from state or federal entities during drought or dry years	Stage 3
Groundwater Pumping of District-Owned Wells	Groundwater pumping of district-owned wells to supplement deficit in surface water supplies consistent with SGMA	Stage 1 through 3
Groundwater Pumping of Landowner Wells	Groundwater to meet demand of on-farm operations when surface water is unavailable	Stage 1 through 3

The Response Action taken by each district in the region will be dependent on a number of factors and therefore, cannot be accurately forecasted. A summary of the variability of each action is briefly described below.

Public Education and Outreach – depending in the demographics of the district and the drought stage level, each district or municipality will engage in education and outreach. In districts that are almost exclusively agricultural, education and outreach will be accomplished through district Board of Director meetings or other communications with landowners. Municipal entities may engage in more broadcasted education and outreach, including, but limited to social media, media outlets and / or public meetings.

Prorating of Water Deliveries – As shown previously demonstrated imported water deliveries vary by district and therefore prorated water deliveries during drought conditions will also vary between districts. The proration of water deliveries will be based on the allocation of imported water available to each individual district.

Water Transfers and Supplemental Surface Water – Each district has varying capacity (physically or economically) to support water transfers. Water transfers may originate from other local districts through exchanges involving multiple parties or from watersheds outside of the region and as far away as Northern California. The availability of transfer water varies depending on conditions in the originating watershed and inter-regional conveyance capacities. The capacity to convey transfer water within and outside of the region is dependent on many factors, including available capacity in local and region infrastructure, regulatory restrictions, priority for access to conveyance facilities, and costs for conveyance. Each district will assess its conditions to participate in water transfers, including the availability of transfer water, market cost of transfers, and conveyance capacity. These factors change as drought conditions change.

Water Banking Activities – The capacity to either bank wet year water or to recover banked water varies by district and over time by district. Each district has developed varied in-district and regional banking programs that allow each district the ability to recover water during drought

conditions. The volume of water that could potentially be recovered in any given drought stage is dependent on many factors, including but not limited to the following:

- Volume of banked in in-district or regional banking projects
- Recovery capacity and priorities in in-district and regional banking projects
- Availability of other supplemental water supplies
- Water banking carry over objectives

Request Disaster Relief – The amount of amount of disaster relief requested by any district is dependent on the individual conditions within each district during particular drought stages and the availability of disaster relief programs.

Groundwater Pumping of District-Owned Wells – The amount of groundwater pumping of district owned wells is dependent on the amount of water available from the other sources available to each district during various drought stages, as explained above. Additionally, the amount of groundwater pumping within each district will be governed by the Measurable Objectives and Minimum Thresholds set within each district and identified in each district's adopted Groundwater Sustainability Plan. Note that Measurable Objectives and Minimum Thresholds, set as groundwater elevations, vary across a district and across the region, and the volume of groundwater pumped within each area of the region effect groundwater elevations differently.

Groundwater Pumping of Landowner Wells – The amount of groundwater pumping of landowner wells is dependent on the amount of water available landowners from the other sources available to each district during various drought stages, as explained above. Additionally, the amount of groundwater pumping within by each landowner will be governed by the Measurable Objectives and Minimum Thresholds set within each district and identified in each district's adopted Groundwater Sustainability Plan. Note that Measurable Objectives and Minimum Thresholds, set as groundwater elevations, vary across a district and across the region, and the volume of groundwater pumped within each area of the region effect groundwater elevations differently.

Additional actions applicable to the region will be added as further development occurs. The details for the short-action, request disaster relief, may be in development within some Districts of the region.

5.2 Evaluation of Response Actions

The responses are evaluated and prioritized by their feasibility and effectiveness to be implemented quickly during a drought.

5.3 Initiation of Response Actions

The Poso Creek IRWM Group members work closely with one another to implement projects and programs that benefit the region. Prior to the initiation of response actions, the Districts and DACs will examine the data collected from drought monitoring and climate forecasting tools as well as assess the vulnerability of water resources in the region.

Response actions are triggered when specific stages of drought are reached. These actions will be initiated and implemented by the Districts and DACs for their respective area based on the severity drought conditions effecting the availability of imported water. Initially, response actions are voluntary, but as more severe stages of drought are identified, these actions will be mandatory to achieve the goals of the drought stage. As previously stated, the California governor will declare a drought emergency at a state-wide or local level. Once a drought is declared, the public will be informed of drought conditions in the region and response actions developed by the Districts and DACs will be initiated.

Response actions will be updated through an on-going basis. In addition, a periodic evaluation of the process used to develop these actions will be done to determine the effectiveness of the Drought Contingency Plan.

Table of Contents

1. Introduction

The Poso Creek Regional Water Management Group (RWMG) has received funding through the United States Bureau of Reclamation (Reclamation) WaterSMART Drought Response Program to develop this Drought Contingency Plan (Plan) for the Poso Creek Integrated Regional Water Management (IRWM) Region. This Plan is a collaborative effort among the member agencies of the RWMG (see **Table 1-1**) and will be incorporated into the Poso Creek IRWM Plan (IRWM Plan) and Agricultural Water Management Plans (AWMP) of all member agencies, with the exception of North West Kern Resources Conservation District who does not deliver water supplies and overlays most of the area of the other member agencies to provide soil and water conservation services.

Table 1-1. Poso Creek RWMG Member Agencies

Member Agencies	
Semitropic Water Storage District (SWSD)	North Kern Water Storage District (NKWSD)
Cawelo Water District (CWD)	Shafter-Wasco Irrigation District (SWID)
Kern-Tulare Water District (KTWD)	Delano-Earlimart Irrigation District (DEID)
North West Kern Resource Conservation District (NWKRCD)	Southern San Joaquin Municipal Utility District (SSJMUD)

Planning occurred in two phases in accordance with the Drought Response Program Framework (Framework) as outlined in **Figure 1-1**. Phase I included the development of a Drought Planning Task Force (Task Force), a Communication and Outreach Plan (C&O Plan), and a detailed Work Plan to describe the tasks, schedule and budget required to complete the plan (Reclamation, 2016a).

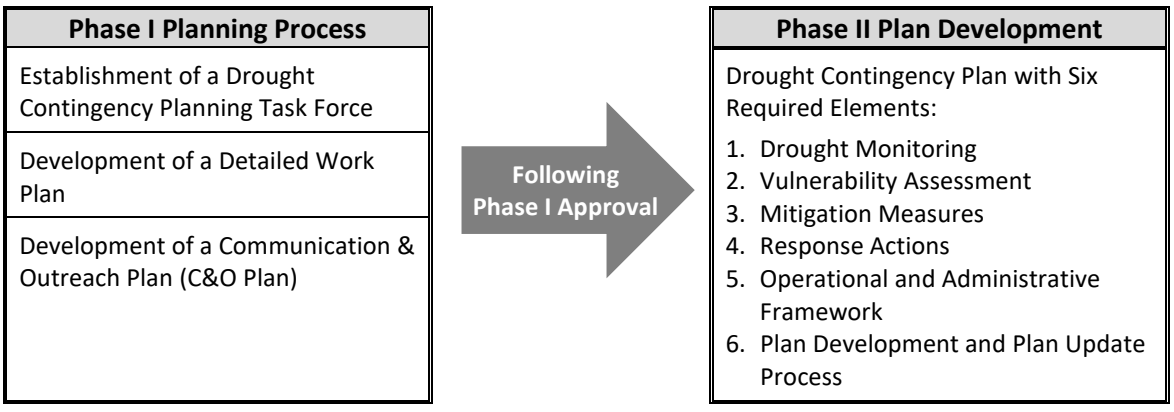


Figure 1-1. Drought Response Program Framework

Development of Phase I documents were completed and approved by Reclamation in March 2020. This Plan is driven by and expands on work completed during Phase I to complete the six required

elements specified in **Figure 1-1**. These elements were developed through a collaborative stakeholder process with the RWMG and is consistent with and incorporate elements of the Sustainable Groundwater Management Act (SGMA) and Urban Water Management Plan (UWMP), and AWMP planning efforts within the region. This Plan builds on each of these planning efforts to incorporate measures centered around managing wet year water supplies to better prepare for and manage during dry or drought periods. The response and mitigation actions presented herein align with those outlined under the previous drought planning to optimize existing regional planning efforts. By integrating with parallel water management programs, this Plan seeks to support overall regional water supply reliability and sustainability.

1.1 Drought Contingency Plan Purpose

The purpose of this Plan is to expand and coordinate existing long-term drought planning efforts to improve future drought monitoring and response strategies to build long-term resiliency to drought. Complementary to the purposes defined in the Framework, the Plan is intended to assist member agencies with:

- Developing a comprehensive drought plan with input and participation from local stakeholders;
- Establish monitoring to aid in recognizing the early stages of drought;
- Understanding how drought affects the region and identifying vulnerabilities;
- Identifying and developing mitigation actions to build long-term resiliency to drought; and
- Identifying and developing response actions taken in response to emerging and ongoing drought.

This Plan accomplishes these purposes by identifying and implementing strategies that monitor short and long-term water availability; assess risks to critical resources in the case of drought; promote mitigation efforts; prioritize wet and drought response actions; ensure that administrative framework and associated responsibilities are clear and transparent; and provide for periodic evaluation and updating of the Plan. Additionally, several member agencies have elected to develop district-specific drought memoranda, with each being included as Appendix A to this Plan. These memoranda provide additional details on drought planning within each member agency's jurisdiction within the Poso Creek Region. Findings of these memoranda are incorporated throughout this Plan to ensure that drought vulnerabilities, mitigation actions, and response actions are appropriately captured to build and implement strategies for the region. Additional coordination took place with member agencies who opted out of providing a memorandum to ensure the above-mentioned elements were captured and incorporated to represent conditions, response strategies and vulnerabilities in their districts.

1.1.1 Drought Plan Objectives

Building off previous regional drought planning efforts and the drought planning purposes provided in Section 1.1, **Table 1-2** outlines the objectives this Plan seeks to accomplish. These objectives are to be accomplished through implementation of the six required planning elements presented in **Figure 1-1.**

Table 1-2. Drought Plan Objectives

Drought Plan Objectives
Enhance reliability and effectiveness of surface water supplies delivered to the Region
Improve regional water conveyance, direct recharge, and in-lieu service actions
Improve effectiveness of water delivery
Improve direct recharge areas
Improve reliability of delivering water supplies to stakeholders
Implement region-wide management actions
Enhance regional conjunctive water use
Maintain quality of water supply.
Facilitate implementation of regional opportunities, projects, and programs
Facilitate implementation of region-wide water management actions
Adapt to change in amount, intensity, timing, and in-lieu service areas
Increase absorptive capacity for banking water when available

These objectives center around the core goal of the Plan to build long-term drought resiliency for the region in advance of a drought crisis. This aligns with the current disaster and drought management planning objectives.

To achieve the goal and objectives as stated above, requires proactive management before a drought occurs, including maximizing the regions capacity to recharge and bank water locally during wet periods. Therefore, in addition to monitoring drought conditions in the watersheds where imported water supplies are developed for the IRWMG, this Plan will also include monitoring for wet conditions when surplus water may be available to support groundwater recharge and banking. A majority of the objectives in **Table 1-2** require and support coordination during wet years. A process for drought monitoring is provided, and mitigation and response actions have been developed based on a regional vulnerability assessment to enhance the capabilities of the region to manage drought consistent with sustainable groundwater management goals and objectives and regional, urban, and agricultural water management.

1.2 Planning Area

The Plan covers the entire Poso Creek IRWM region, which includes all RWMG agencies (or districts), cities, and communities. To reiterate, the RWMG agencies are: SWSD, CWD, NKWSD, SWID, KTWD, DEID, NWKRCD, and SSJMUD. The RWMG service areas encompass approximately 934 square miles, which covers numerous cities and communities. The cities that are included within the service areas are: Cities of Shafter, Wasco, McFarland, Delano, and Lost Hills, which also includes communities such as Richgrove CSD. Majority of the cities and surrounding areas are considered disadvantaged communities (DACs), with additional

communities outside of the city boundaries also considered as DACs. Given that there are multiple DACs in the Poso Creek region, identifying and developing strategies for combatting drought in these communities is an important aspect of the Plan.

The region depends heavily on local agriculture, which in recent years has seen a trend away from field crops in favor of nuts, primarily almonds and pistachios (**Table 1-3**). This trend towards permanent crops represents a "hardening" of the crop water requirement for the area and reduced annual water demand flexibility. Table 1-3 demonstrates the percentage of specific crop use in the Poso Creek region in a given year and also the percentage of change. The cumulative change shows the reduction of field crops over the years and the increase in permanent crops.

Table 1-3. Crop Pattern for Poso Creek Region

Crop Category [2]	2005 [1]	2013 [1]	2014 [3]	2016 [4]	2017 [4]	2018 [5]	2019 [4]	2020 [6]	Change (2020 2019)	Cumulative Change
Citrus and Subtropical*	9%	7%	6%	5%	6%	7%	5%	4%	-0.4%	-5%
Deciduous Fruits and Nuts*	37%	51%	47%	65%	61%	59%	69%	73%	4.1%	36%
Field Crops	13%	5%	4%	10%	11%	6%	8%	7%	-0.8%	-6%
Grain and Hay Crops	14%	14%	11%	8%	8%	5%	5%	5%	0.1%	-9%
Truck, Nursery, and Berry Crops	5%	3%	5%	3%	2%	2%	2%	1%	-0.2%	-4%
Vineyards*	22%	21%	27%	10%	9%	15%	9%	7%	-2.0%	-15%
Small Vegetables	0%	0%	0%	0%	0%	0%	0%	0%	0.0%	0%
Other	0%	0%	0%	0%	3%	5%	1%	1%	-0.8%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	-	-
Permanent Crops	68%	78%	80%	79%	75%	82%	83%	85%	1.7%	17%

*Permanent crops.

[1] Baseline conditions based on crop surveys conducted by each district in the Region.

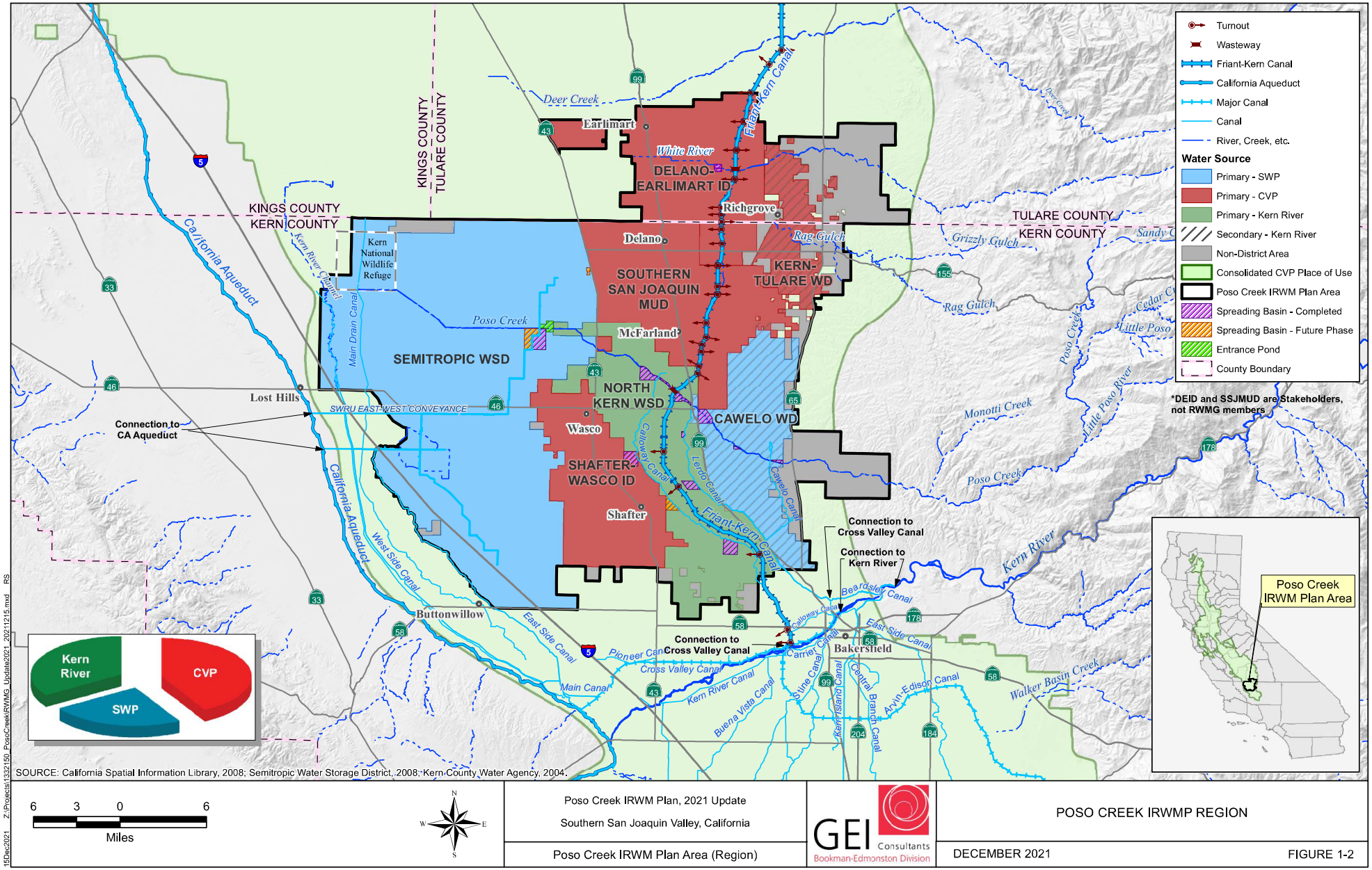
[2] Percentages are based on the total for the crop categories shown in the table.

[3] Percentages are based on 2020 LandIQ data (most recent available data) for each district in Region

[4] Based on crop surveys available for NKWSD and CWD, and Land IQ data available SWSD.

[5] Based on crop surveys available for NKWSD, KTWD, and CWD, and Land IQ data available SWSD and SSJMUD.

[6] Based on crop surveys available for NKWSD, SWID, and CWD, and Land IQ data available SWSD.



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15Dec2021

Poso Creek IRWM Plan, 2021 Update

Southern San Joaquin Valley, California

Poso Creek IRWM Plan Area (Region)

GEI Consultants

Bookman-Edmonston Division

POSO CREEK IRWMP REGION

DECEMBER 2021

FIGURE 1-2

1.3 Background

As identified in the 2019 Poso Creek IRWM Plan Update (Poso RWMG, 2019), droughts are expected to become more frequent and intense, interspersed with severe wet periods as a result of climate change. Droughts are common throughout the Western U.S, and California experiences a drought every 7 years on average. However, recent years have seen increasingly intense drought conditions and there is growing evidence to attribute these effects to climate change (Reclamation, 2016b). For this reason, the RWMG has developed this drought contingency plan to support long-term drought resiliency.

Drought contingency planning builds on and complements existing planning efforts in the region with respect to integrated regional water management and conjunctive use, and sustainable groundwater management. Existing planning efforts include but are not limited to:

Table 1-4. Complementary Drought Planning Efforts

Complementary Planning Efforts	Elements Used for Drought Planning
2019 Poso Creek IRWM Plan Update: Reflects the IRWM Group's efforts to address new requirements, specifically focusing on regional water self-reliance and adapting to the effects of climate change such as drought and reduced water imports	Regional goas and measurable objectives used as basis for drought plan objectives; Developed projects to maximize imported surface water benefits and reduce overdraft of groundwater integrated into drought mitigation actions; and climate change assessment used to support the drought vulnerability assessment
Agricultural Water Management Plans: AWMPs are plans specific to each agricultural water supplier in the region and are being implemented to improve the efficiency of agricultural water management	Updated agricultural water demand estimates and land use
Urban Water Management Plans: UWMPs are prepared by urban water suppliers to support long term resource planning and ensure that adequate water supplies are available to meet existing and future water needs	Surface water supply reliability for urban water suppliers
Groundwater Sustainability Plan of the Kern Groundwater Authority: The Kern Groundwater Authority has implemented the Sustainable Groundwater Management Act to mitigate groundwater overdraft balancing the inflow of water with pumping and groundwater use. Groundwater sustainability plans have been developed and are under implementation by each RWMG agency	The basin setting; water budgets; monitoring network; sustainable management criteria; and projects and management actions sections were used as basis for development of the DCP six required planning elements.
Local Drought Planning Memoranda From Member Agencies: Provide additional details on drought planning within each member agency's jurisdiction within the Poso Creek Region.	Findings of these memoranda are incorporated throughout this Plan to ensure that drought vulnerabilities, mitigation actions, and response actions are appropriately captured to build and implement strategies for the region.

1.4 Plan Development

The following sections provide an overview of the planning process and development of the Plan. All relevant meeting documents and materials are provided in Appendix B.

1.4.1 Drought Task Force

A Task Force was formed consisting of interested stakeholders and members of the RWMG, with SWID as the Task Lead (**Table 1-5**). In coordination with stakeholders, consultants, and subject matter experts, the Task Force and Task Lead supported the development of several Plan aspects. Prior to Plan development, the Task Force convened to review and approve the contents of the Work Plan and the C&O Plan. This Task Force operates under an "open door" policy in which additional interested parties are welcomed and encouraged throughout the drought planning process.

Table 1-5. Drought Task Force

Stakeholder	Organization/Agency	Sector
Kris Lawrence (Task Lead)	Shafter-Wasco Irrigation District	Agriculture
Isela Medina	Semitropic Water Storage District	Agriculture
David Ansolabehere	Cawelo Water District	Agriculture
Eric Quinley	Delano-Earlimart Irrigation District	Agriculture
Steve Dalke	Kern-Tulare Water District	Agriculture
Ram Venkatesan	North Kern Water Storage District	Agriculture
Brian Hockett	North-West Kern RCD	Agriculture
Roland Gross	Southern San Joaquin Municipal Utility District	Agriculture
Amanda Rollin	Lost Hills Utility District	DAC/Municipal
Andrew Garcia	Santa Clara Valley Water District	Municipal
Biridiana Bishop	City of Wasco	DAC/Municipal
Geoffrey Vanden Heuvel	Milk Producers Council	Agriculture
Jeff Eklund	Kern IRWM Facilitator / Provost & Pritchard	Municipal/DAC/Agriculture
Jon Reiter	Maricopa Orchards	Agriculture
Timothy Gobler	Illume Agriculture	Agriculture

Documentation of Task Force meetings and stakeholder outreach is presented in **Table 1-6** and Appendix B, respectively. Since this Plan will be incorporated into the Poso Creek IRWM Plan, Task Force meetings are held in conjunction with RWMG meetings in the form of an agenda discussion and/or action item. **Table 1-6** provides documentation of public RWMG meetings that included discussion on the Plan.

Table 1-6. Task Force Meetings

Meeting	Date	Action/Purpose
Poso Creek RWMG Meeting	October 1, 2019	Approval of Interim Task Force for Drought Plan Development
Poso Creek RWMG Meeting	December 18, 2019	Presentation of Work Plan and C&O Plan with preliminary approval of Work Plan
Poso Creek RWMG Meeting	March 9, 2020	Presentation and final approval of Drought Work Plan
Poso Creek RWMG Meeting	September 1, 2020	Update on Drought Plan development
Poso Creek RWMG Meeting	November 2, 2021	Presentation and adoption of final Drought Contingency Plan

All meeting materials were distributed prior to convening in accordance with the C&O Plan. Additional correspondence with the Task Force took place throughout the drought plan development to circulate and provide opportunity for several planning documents including the Work Plan, C&O Plan, and draft Drought Contingency Plan document. It is important to note that the RWMG served as the interim Task Force until a more inclusive and representative Task Force of the region was established in March 2020.

1.4.2 Communication and Outreach

A C&O Plan was developed to describe the planned activities for engaging interested parties in the development and implementation of the Drought Contingency Plan for the Poso Creek Region and to provide opportunities for interested parties to participate. The following sections provide overview of the C&O Plan with the complete document provided as Appendix C. This plan serves as a roadmap to support the desired outcomes identified below.

- Objective 1: Educate the public about the importance of the Drought Contingency Plan and their participation.
- Objective 2: Engage a diverse group of stakeholders representing different social, cultural, and economic elements of the population.
- Objective 3: Make stakeholder participation easy and accessible.
- Objective 4: Provide a roadmap for RWMG leadership.

Throughout drought plan development, two public workshops were held virtually to present key components of the Drought Contingency Plan and provide opportunity for public input and feedback. Workshops (**Table 1-7**) were open to the public and input was taken under thoughtful consideration when developing the six required plan elements. While only two workshop was dedicated for public outreach, all RWMG meetings presented in **Table 1-7** where public and members of the communities were encouraged to participate. Appendix B provides the meeting agendas for each DCP workshop. Only meeting minutes for Task Force meetings are provided since they were hosted by the RWMG, which is Brown Act governed.

Table 1-7. Outreach Workshops

Meeting	Date	Action/Purpose
Poso Creek IRWM Drought Contingency Plan Workshop – I	November 18, 2020	Presentation of drought plan development strategy including drought monitoring as well as mitigation and response actions.
Poso Creek IRWM Drought Contingency Plan Workshop – II	April 6, 2021	Presentation of drought monitoring programs including mitigation and response actions.

1.5 Roles and Responsibilities of Plan Implementation

Table 1-8 lists the roles and responsibilities of the members of the RWMG, which have been separated out into two groups in the region: agricultural water districts and DACs/municipalities. Both these groups are responsible for the implementation of each element of the Drought Contingency Plan for their respective area. The DACs and municipalities are collectively referred to as DACs since they are synonymous and hold the same responsibilities. In addition, the California governor is listed as the responsible entity to declare drought emergencies at a state and local level. However, regional monitoring of climate and critical resource conditions may detect severe drought conditions prior to the official declaration of a drought emergency. Responsible agencies for regional monitoring include the California Department of Water Resources (DWR), California Data Exchange Center (CDEC), the local Friant Water Authority, the California Nevada River Forecast Center, and the National Oceanic and Atmospheric Administration (NOAA).

Table 1-8. Roles and Responsibilities

Roles and Activities

Each entity is responsible within their respective area for:
 	
▪ Drought Monitoring: Districts and DACs will consider the data reported in Section 2 of the Drought Contingency Plan and provide updates based on monitored drought conditions impacting their respective area.
  ▪ Resources: drought monitoring and climate tools developed by government agencies such as DWR.
▪ Drought Stages: The DCP has defined four stages of hydrologic conditions for proactively managing drought conditions. The entities listed in Table 2-2 are responsible for determining the stage of drought for their respective areas. Vulnerability Assessment: Districts and DACs will utilize the assessment done in Section 3 of the Drought Contingency Plan and continue to assess vulnerabilities as needed to further develop and implement necessary mitigation and response actions for their area.
  ▪ Resources: Monitoring tools, Data collection from subject matter experts for supply and demand of water sources.
▪ Mitigation Actions: Districts and DACs will initiate and implement mitigate actions according to the processes described in Section 4 of the Drought Contingency Plan for their area and develop additional actions as needed and in coordination with parallel programs.
  ▪ Resources: State, Federal and local drought relief programs as described in Section 4.
▪ Response Actions: Districts and DACs will implement, and initiate response and response actions described in Section 5 of the Drought Contingency Plan for their area during drought conditions as well as develop additional actions as needed.
  ▪ Resources: State, Federal and local drought relief programs as described in Section 5.
▪ Plan Update Process: The Poso Creek RWMG is responsible for the plan update. Each entity is responsible for examining, evaluating, and providing updates to each element of the Drought Contingency Plan for their area on a regular basis; at least every 5 years.
  ▪ Resources: Further details are described in Section 6 of the Drought Contingency Plan.
▪ Communicate with Public: Each entity will communicate the severity of drought conditions and necessary mitigation actions and response actions to implement for the area.
▪ The entities will contract with consultants and other experts who will perform technical work for the elements of the Drought Contingency Plan as needed such as procurement and resource tracking.

• According to the Department of Water Resources (DWR), it is the responsibility of the California Governor to declare State or local drought emergencies for vulnerable regions under the provisions of California's Emergency Services Act. (1)

[1]Retrieved from: https://water.ca.gov/water-basics/drought

2.2.1 Drought Stages

The Poso Drought Contingency Plan has defined four stages of hydrologic conditions for proactively managing drought conditions. These stages, described below, include a both dry and wet condition monitoring with associated mitigation responses. The entities listed in Table 2-2 are responsible for determining the stage of drought for their respective areas and will use forecasting outlined in Section 2.2 when determining drought stages. Drought stages will be communicated by each District to DACs within their respective boundaries.

2.2.1.1 Surplus Conditions Stage

The Surplus Conditions Stage is the most critical stage of drought monitoring in the Poso Creek Region. As described in this Plan, the ability of the Poso Creek Region to manage and mitigate drought conditions is through the capture and recharge of surplus water supplies into the local groundwater aquifer, where it can be held for use in future drought conditions. Each RWMG water management entity has developed groundwater recharge program, individually or in coordination with other Kern County entities to maximize the recharge capability in the Poso Creek Region, as well as Kern County. During the Surplus Conditions Stage, the Drought Task Force will initiate coordination among the RWMG water management entities and other recharge and banking projects in Kern County to ensure the region is maximizing its ability to capture, convey, and recharge all available surplus waters. **Table 2-2** list the surplus water supplies potentially available, the RWMG district to which those supplies are available, and the Surplus Conditions trigger.

Table 2-2. Primary Surplus Conditions Stage Water Sources

Surplus Water Source	Entity Source is available to	Stage Trigger
CVP – Friant Division Class 1	DEID, SWID, SSJMUD	+75% allocation
CVP – Friant Division Class 2	DEID, SWID, SSJMUD, KTWD	+50% allocation
CVP – Cross Valley	KTWD	+90% allocation
CVP – 215 Water	DEID, SWID, SSJMUD, KTWD, SWSD	Any allocation
Kern River	NKWSD	120% of normal April-July forecast
Poso Creek	CWD, NKWSD, SWSD	+ 500 cfs

The Drought Task Force will engage the Surplus Condition Stage whenever a Stage Tigger is exceeded. The goal of the Task Force will be to maximize coordination among RWMG member agencies to ensure surplus water is captured and stored locally for use during dry years.

2.2.1.2 Drought Stage 1 – Severe Drought

Drought Stage 1 represents the first level of drought response in the Poso Creek Region where the region is experiencing severe drought. At this stage the Drought Task Force will engage to coordinate an initial stage of managing the recovery of locally banked water or support water transfers to RWMG member agencies to meet any shortages in imported water supplies. **Table 2-**

Table 3-12. District Water Quality Information

District(s)	Water Quality Section	Website Link
Semitropic Water Storage District (SWSD)	Section 2.3.5	http://www.kerngwa.com/reports.html
North Kern Water Storage District (NKWSD) and Shafter-Wasco Irrigation District (SWID)	Section 2.3.5	
Cawelo Water District (CWD)	Section 3.9	
Kern-Tulare Water District (KTWD)	Section 2.3.2	
Southern San Joaquin Municipal Utility District (SSJMUD)	Section 2.3.4	
Delano-Earlimart Irrigation District (DEID)	Section 2.3.4	https://www.deid.org/gsa/#gsa

3.5 Risk Assessment

This section focuses on the sensitivity and consequence analysis of drought vulnerabilities in the Poso Creek Region by accessing water supply reliability and the risks posed due to additional factors with an incorporation of climate change information. For this Plan, risks should be viewed as a combination of:

- Sensitivity and frequency of occurrence,
- Magnitude and severity, and
- Consequences.

3.5.1 Drought Vulnerabilities

With anticipated reduction in reliability to principal water sources of the region, the effects of drought conditions on the previously identified critical resources create drought vulnerabilities. **Table 3-13** shows these vulnerabilities are listed in order of most to least sensitive to drought and the consequences that can result from these vulnerabilities.

3.5.2 Risk Factors

When considering the effects of drought conditions on critical resources, local and external factors were considered to further develop mitigation and response actions. Local factors within the Poso Creek Region include climate conditions (precipitation, weather, etc.), aging infrastructure, decreasing groundwater elevations in the local aquifer, and economic factors.

Table 3-13. Water Use in the Poso Creek Region

Drought Vulnerabilities	Potential Consequences
Conservation of groundwater to meet the SGMA sustainability goals	Groundwater elevations must be maintained above Minimum Threshold values to avoid Undesirable Results. As a result, the region cannot solely rely on groundwater to supplement lower surface supplies in dry years or the groundwater levels will continue to decrease.
Allocation reductions to Friant Division long-term contractors as San Joaquin River is implemented to allow for increased and ultimately full release of Restoration Flows	Potential reductions due to environmental regulation on the San Joaquin River result in lower surface supplies to the CVP-Friant water contractors. Continued reductions could result in a decrease in irrigated lands if available supplies cannot meet demands.
Reduction in SWP and CVP allocations	Decreased SWP and CVP allocations lead to increased groundwater pumping that lead to inelastic subsidence and potential impacts to critical infrastructure
Reduction in imported water supply allocations (SWP, CVP and Kern River) with declining groundwater levels	Decreased imported supply allocations with lowering groundwater levels lead to increase land fallowing which has an economic impact to Kern County, who relies on two primary industries for revenues, agriculture and petroleum industries.
Allocation reductions in CVP and SWP supplies due to hydrologic variability or institutional constraints	Potential reductions due to variable hydrology as a result of climate change directly impacts the surface supplies provided for irrigated acres. Continued reductions could result in a decrease in irrigated lands if available supplies cannot meet demands
Variable Lake Isabella reservoir storage	Lower Lake Isabella reservoir storage causes lower flows to Kern River thereby lowering available water supply to the region. Lower storage could result in a decrease in irrigated lands if available supplies cannot meet demands
Variable Kern River supplies	This is a result of variable sources at the source (Lake Isabella reservoir) and directly affects water supplies received by Kern River water contractors.
Variable and restricted FKC capacity	Given the reliance of water supply conveyed through the FKC, this could impact the supplies received for irrigation use.
Municipalities that rely solely on groundwater	Given the requirements of SGMA, municipalities reliant on groundwater alone could be impacted by higher groundwater pumping costs as groundwater elevations decrease in dry years.
Increased groundwater pumping costs and well impacts potentially caused by decreasing groundwater elevations	This is an economic result of decreasing groundwater elevations. This could decrease the land use for irrigated acres, if groundwater pumping is too expensive during times when surface water is unavailable.

Appendix B – Letters of Support

CITY HALL
1015 ELEVENTH AVENUE
POST OFFICE BOX 3010
DELANO, CALIFORNIA 93216-3010

(661) 721-3300
(661) 721-3317 TDD
www.cityofdelano.org

September 26, 2024

Roland Gross, General Manager
Southern San Joaquin Municipal Utility District
PO Box 279
Delano, CA 93216

RE: Letter of Support for Woollomes Avenue Recharge Project

Dear Grant Review Committee,

This is to express our strong support for the proposed Woollomes Avenue Recharge Project, which aims to improve water security and long-term resource management. Please accept this letter in favor of the application for funding from the Bureau of Reclamation.

Our City relies heavily on groundwater for daily use, agriculture, and economic stability. As a state-designated disadvantaged community, it is essential that we maintain reliable access to clean and sustainable water resources. The proposed project aligns with our goals of addressing water scarcity, enhancing drought resilience, and supporting local water management.

We believe that this project will provide critical improvements to our water infrastructure, ensuring the sustainability of our water supply for years to come. The additional resources this project will provide will have a lasting, positive impact on our community.

For these reasons, we fully support the Woollomes Avenue Recharge Project grant application, if you have any questions or concerns, please feel free to contact me at (661)720-2219.

Regards,

Roman Dowling, PE
City Engineer/ Public Works Director

THE CITY OF McFarland
TRADITION • UNITY • EXCELLENCE

401 W. Kern Avenue
McFarland, CA 93250
661-792-3091 Office
661-792-3093 Fax

Roland Gross
General Manager
Southern San Joaquin Municipal Utility District
PO Box 279
Delano, CA 93216

October 3, 2024

Subject: Letter of Support for Woollomes Avenue Recharge Project

Mr. Roland Gross,

The City of McFarland fully supports the Southern San Joaquin Municipal Utility District's proposed Woollomes Avenue Recharge Project as part of the broader groundwater sustainability efforts. Please accept this letter in support of the Bureau of Reclamation's application for the project.

As a Disadvantaged Community (DAC), the City of McFarland recognizes the critical need for reliable access to sustainable water resources. The Woollomes Avenue Recharge Project is an important initiative that will strengthen groundwater stability, reduce drought vulnerability, and provide multiple benefits, including improved management of our region's groundwater supply and quality.

We believe this project is vital for ensuring long-term water sustainability and effective resource management. On behalf of the City of McFarland, we express our full support for these efforts, as well as for other community-driven initiatives aimed at enhancing water reliability

Thank you for your consideration. We look forward to the successful implementation of this project and the positive impact it will have on our community.

Sincerely,

Diego Viramontes
City Manager

Mr. Roland Gross, General Manager
Southern San Joaquin Municipal Utility District
11281 Garzoli Ave, Delano, CA 93215

September 30, 2024

Subject: Letter of Support for Woollomes Avenue Recharge Project

Dear Mr. Gross,

On behalf of local landowners in the District, I am writing to express our strong support for the Southern San Joaquin Municipal Utility District's ***Woollomes Avenue Recharge Project***. This project aims to enhance the recharge of the underlying aquifer, providing significant benefits to landowners within the District.

The proposed project will enable the conveyance of water to recharge facilities, capturing excess flows for groundwater recharge and later recovery for beneficial use. This effort to promote groundwater sustainability is vital for local landowners, who rely on groundwater as a supplementary supply alongside their primary federal water contract. By addressing existing drought vulnerabilities, this project will provide long-term benefits to the entire region.

Please accept this letter as an endorsement of funding for this project.

Regards,

Denise Regan

POSO CREEK IRWMP
Management Group

1101 Central Avenue, Wasco, CA 93280
661-758-5113

October 7, 2024

Mr. Roland Gross
General Manager
Southern San Joaquin Municipal Utility District
11281 Garzoli Ave, Delano, CA 93215

Subject: Letter of Support for Woollomes Avenue Recharge Project

Mr. Gross,

On behalf of the Poso Creek Integrated Regional Water Management (IRWM) Group, I am writing to express our full support for Southern San Joaquin Municipal Utility District's (SSJMUD) Woollomes Avenue Recharge Project. This important initiative aims to enhance regional groundwater sustainability and address critical water resource challenges, including extended drought periods that have significantly impacted the region.

The proposed project will enable SSJMUD to divert surface flows from the Friant-Kern Canal to the recharge facility during wet periods, allowing for future recovery during dry periods. This will improve water supply reliability, raise groundwater levels, and provide greater flexibility in the timing of Central Valley Project deliveries from the Friant-Kern Canal, thereby increasing SSJMUD's operational flexibility across the region.

SSJMUD's project is fully aligned with the objectives of the Poso Creek IRWM Region Drought Contingency Plan, which prioritizes enhancing the reliability of surface water supplies and improving regional water conveyance and in-lieu recharge services. Additionally, this project supports conjunctive use efforts, advancing region-wide groundwater sustainability consistent with the goals of the Sustainable Groundwater Management Act (SGMA).

The Poso Creek IRWM Group recognizes the significant benefits this project will bring to our region and fully endorses its implementation. We hope that our support will contribute to securing the necessary grant funding for the project. Please feel free to reach out if you have any questions regarding our strong interest in and support for this initiative.

Sincerely,

Kris Lawrence
Chairman, Poso Creek IRWM Group
klawrence@swid.org
661-758-5369

4. Required Permits or Approvals

For the Project, an NPDES construction permit and a PM-10 Dust Control permit will be required. The District anticipates that all construction will take place within the boundaries of its property and, therefore, will not be subject to the County's or City's jurisdiction regarding building and grading permits.

5. Overlap or Duplication of Effort Statement

In terms of costs and activities, no overlap exists between this Project and any other active or proposed projects. Roland Gross, General Manager of SSJMUD, will serve as Project Manager for this Project. Similarly, Mr. Gross will serve as Project Manager for other projects previously or currently being submitted to Reclamation for funding. This proposal does not duplicate any proposal that has been or is anticipated to be submitted for funding Federal of non-Federal funding.

6. Conflict of Interest Disclosure Statement

At the time of submission of this proposal, no actual or potential conflict of interest exists.

7. Uniform Audit Reporting Statement

SSJMUD was not required to submit a Single Audit for the most recently closed fiscal year.

8. SF-LLL: Disclosure of Lobbying Activity

The District does not participate in lobbying activities and will therefore not be submitting an SF-LLL at this time. This District has not made nor has agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action.

Further, the District is submitting with this application form SF-424. As stated in the NOFO, the signature on the SF-424 represents the required certifications regarding lobbying.

9. Letters of Support

Letters of Support from the City of Delano, the City of McFarland, a local landowner and the Poso Creek IRWM Group are provided in Appendix B

10. Official Resolution

If selected, SSJMUD will provide an official resolution adopted by their board of directors, committing the applicant to the financial and legal obligations associated with receipt of an award under Notice of Funding Opportunity (NOFO) No. R25AS00013.

11. Letters of Funding Commitment

SSJMUD is the sole entity responsible for providing cost-share funding.