

Southern San Joaquin Municipal Utility District

**Caratan Groundwater Recharge Facility**

WaterSMART Drought Response Program:  
Drought Resiliency Projects for Fiscal Year 2024  
Notice of Funding Opportunity No. R24AS00007

**Applicant**

Southern San Joaquin Municipal Utility District  
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October 31,2023

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## Executive Summary

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<b><i>Project Information</i></b>	
<b>Date</b>	October 31, 2023
<b>Project Name</b>	Caratan Groundwater Recharge Facility for Regional Drought Resiliency
<b>Expected Completion</b>	24 Months
<b>Construction Start</b>	June 1, 2025 with a duration of no more than 5 months
<b>Near a Federal Facility</b>	Yes, adjacent to CVP's Friant Kern Canal
<b><i>Applicant Information</i></b>	
<b>Name</b>	Roland Gross
<b>Title</b>	General Manager, Southern San Joaquin Municipal Utility District
<b>City, County, State</b>	Delano, Kern, California
<b>Category</b>	Category A – Water District
<b>Funding Group</b>	Funding Group II

The Southern San Joaquin Municipal Utility District (SSJMUD, District) proposes to utilize their resources in a cost shared project with the US Bureau of Reclamation (Reclamation, USBR) to convert 160 acres, located in Delano CA, into recharge ponds as a spreading facility that will provide an additional average annual volume of approximately 5,560 AFY with a 10-year average annual of 55,600 to recharge groundwater with surface supply. The Project solves a major water management issue identified by the District: the lack of in-district groundwater recharge capacity. The Caratan Groundwater Recharge Facility for Regional Drought Resiliency (Project) is a Task A project – increasing the reliability of the District's water supplies through infrastructure improvements. 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 recharge capacity can play a crucial role in alleviating the impacts of these drought conditions, ensuring a more resilient water supply for the region. The Project is supported by the Poso Creek Integrated Regional Water Management (IRWM) Plan and the IRWM Region's Drought Contingency Plan.

It is anticipated that Project can be completed within 24 months from the time grant funding is secured. The preliminary Project development started in 2023 with the site parcel purchase completed by the District in July 2023. Anticipated construction is expected to begin June 2025 for a duration of no more than six months for completion by December 2025.

### **Relevant Background Information**

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 District's size is approximately 66,000 acres with an irrigated acreage of approximately 51,000 acres (SSJMUD Water Management Plan, 2022). A 2019 crop survey by the District, about 90% of the District's irrigated lands are planted to permanent crops, primarily almonds (34%), grapes (34%), pistachios (10%), and oranges (10%). The Cities of Delano and McFarland are within SSJMUD's jurisdictional area. 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 Agricultural Water Management Plan (AWMP) update by multiplying crop-specific gross crop water usage (AF/acre) by the number of acres for each respective crop. With this method, it was estimated that approximately 126,292 AFY is needed to meet crop water demand. Presently, there are no apparent long-term trends toward increasing irrigated acreage within the District.

### **Primary Water Supplies and Sources**

The District is in the CVP's Friant Division and receives water via the Friant-Kern Canal (FKC) under contract with USBR. Figure 1 illustrates CVP water deliveries to SSJMUD via the Friant FKC. Current District CVP contract supplies are detailed in Table 1.

**Table 1. Annual Contract allocation**

<b>Water Supply</b>	<b>Annual Contract Allocation (acre-feet)</b>
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 always receive scheduled water required to meet irrigation demands. The District's CVP supply allocations have averaged 44%, signifying a substantial decline in surface water reliability. See Table 2 for a ten-year average of FKC diversions (2013-2022) at 62,512 acre-feet per year.

**Table 2. Diversions from Friant Kern Canal**

<b>Source</b>	<b>Average</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
CVP, Diversions from Friant Kern Canal	62,512	60,953	5,750	3,318	73,206	113,196	97,957	104,171	<i>81,240</i>	<i>28,884</i>	<i>56,445</i>

Source: USBR Website for Mid Pacific Region Central Valley Operations ("Table 22") except District revised values as noted by *italic text*.

Years 2020-2022 have been updated from USBR Website for Mid Pacific Region Central Valley Operations Table 22 (SSJMUD- OUT)  
2020: [https://www.usbr.gov/mp/cvo/vungvari/table\\_22\\_2020.pdf](https://www.usbr.gov/mp/cvo/vungvari/table_22_2020.pdf)  
2021: [https://www.usbr.gov/mp/cvo/vungvari/table\\_22\\_2021.pdf](https://www.usbr.gov/mp/cvo/vungvari/table_22_2021.pdf)  
2022: [https://www.usbr.gov/mp/cvo/vungvari/table\\_22\\_2022.pdf](https://www.usbr.gov/mp/cvo/vungvari/table_22_2022.pdf)

## **Project Location**

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The Project is in Kern County, California, approximately 5 miles Southeast from Delano and 35 miles north of Bakersfield. The Project latitude is {35°44'47.9"N} and longitude is {119°11'02.0" W}. The recharge site is located at APN 050-100-06. The proposed recharge basin is located immediately west of Lake Woollomes, directly adjacent to the Friant Kern Canal. The location of the recharge basin site in relation to the District is shown in Figure 2, project features are included in Figure 3. Both are included at the end of this section.

## **Project Description**

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The proposed Project will result in the conversion of a 160-acre parcel into a groundwater recharge facility that will be connected to the District's existing conveyance system right at the Friant-Kern Canal for delivery of water to the spreading facility. The location of the Project site is shown in Figure 2.

Construction of a recharge basin aims to replenish groundwater resources and manage stormwater runoff to mitigate flooding and improve water quality. The primary goal is to create a facility that captures and stores excess rainwater or runoff, allowing it to infiltrate into the ground and recharge the underlying aquifers.

The work involved in constructing a recharge basin encompasses several key steps. First, site selection is critical, considering factors such as soil permeability, proximity to water sources and conveyance, and land use. An ideal site was identified and purchased in 2023. Upon acquisition, the land was surveyed to support the development of a 30% design. Design of the proposed groundwater recharge basin includes exterior levees around the perimeter of the site and interior berms to direct the flow of water onto the site and facilitate spreading in several ponds. Interior channels will be used to provide distribution to individual recharge ponds. Earthwork will be designed so that the cut and fill quantities are balanced with no importation or exportation of material anticipated.

In the earthwork construction of a recharge basin, standard equipment includes heavy machinery like excavators, bulldozers, and graders, which are used for earthmoving and grading tasks to shape the basins and ensure proper water flow. Dump trucks are used to transport and distribute soil materials for levees. Levees between basins are compacted for driving on and not areas for water seepage. Additionally, surveying equipment like total stations and GPS devices is used to ensure accurate basin dimensions and gradients.

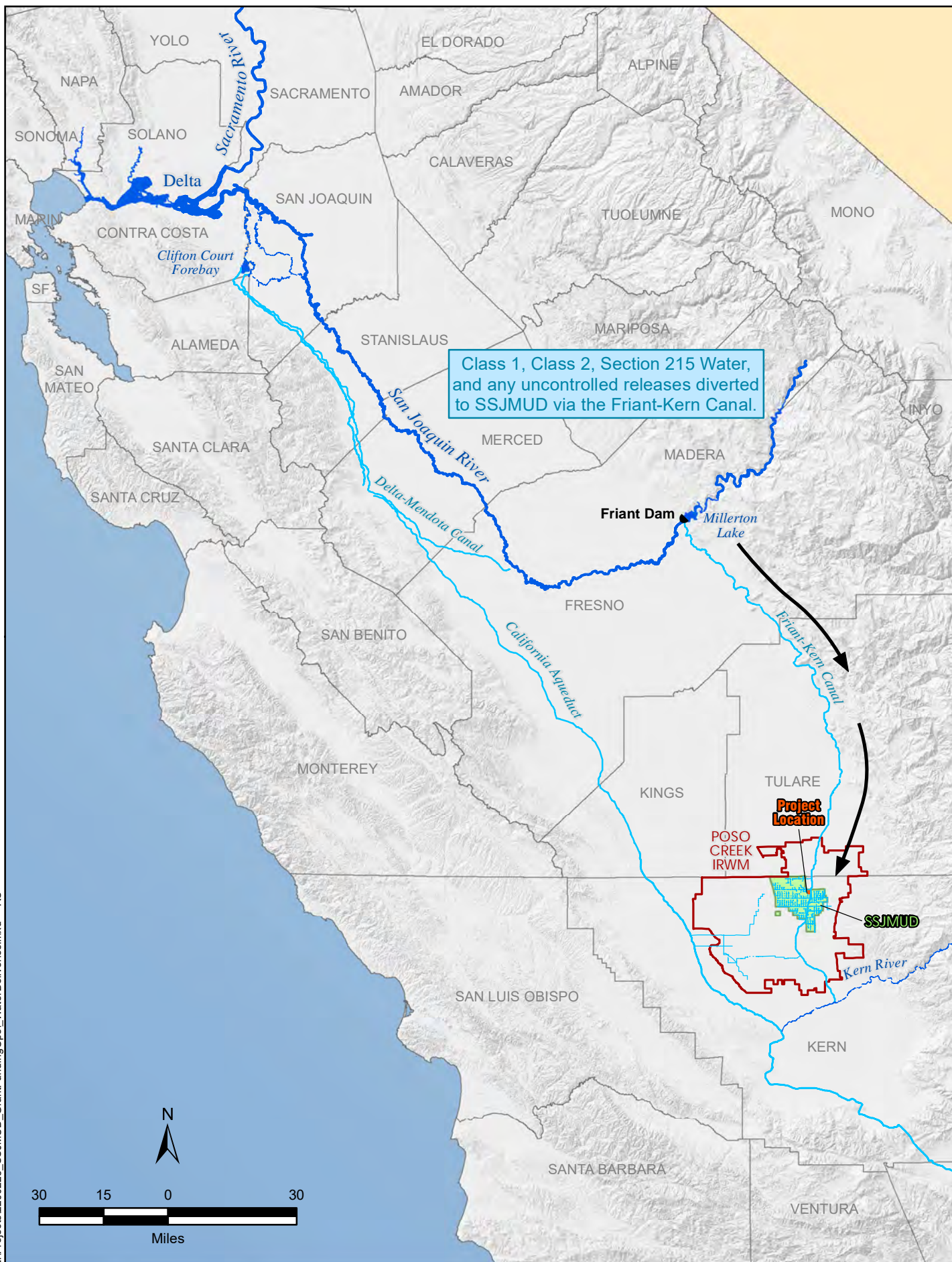
## **Performance Measures**

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All deliveries of water into SSJMUD are measured at KFC 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 (SSJMUD AWMP, 2021).

The turnout to the proposed recharge basin will have a flowmeter with totalizer to allow SSJMUD to measure all water delivered through the turnout, which is directly connected to the Friant Kern Canal. 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.

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Drought Resiliency Project  
Kern County, California

Southern San Joaquin Municipal Utility District

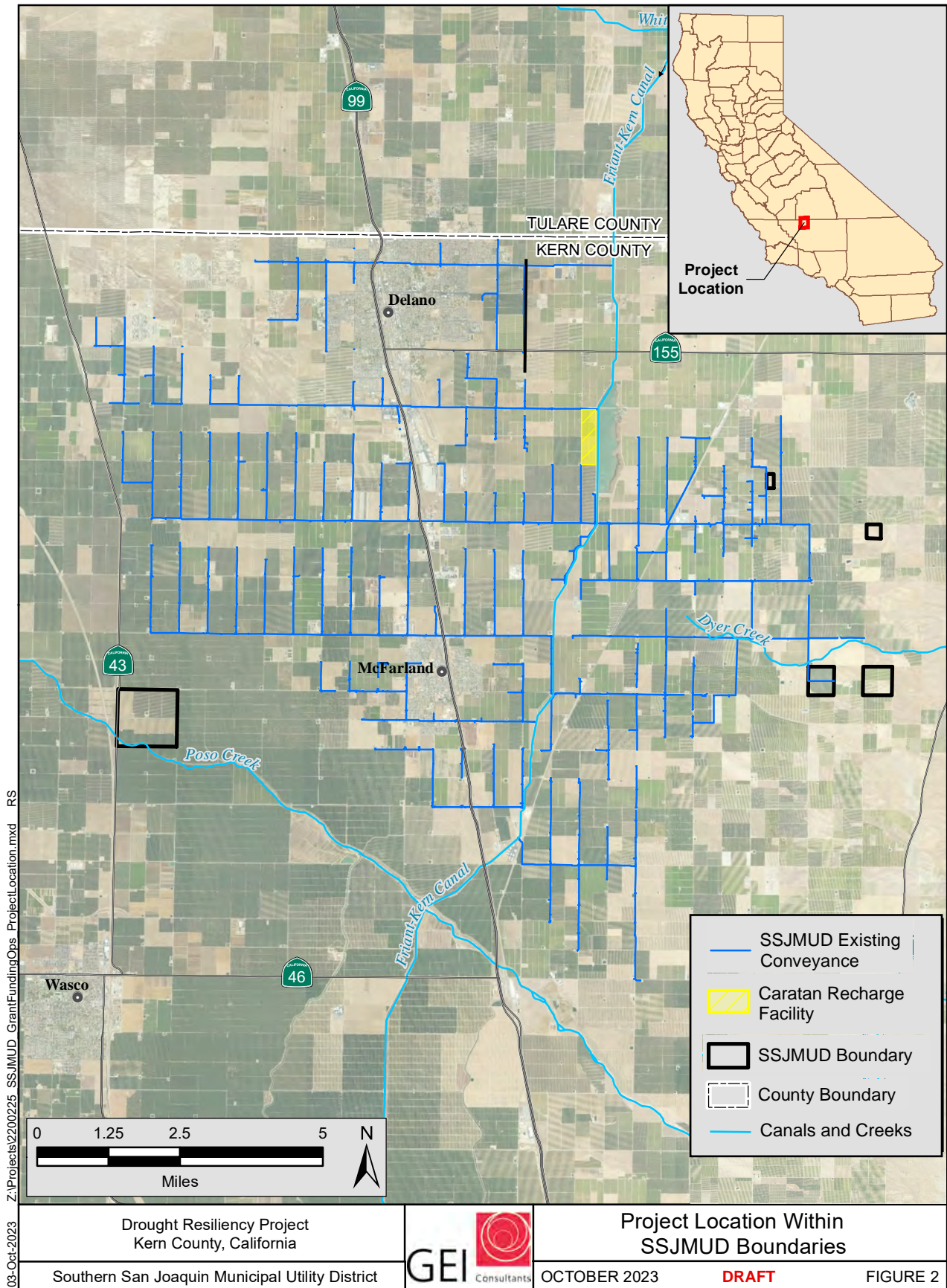


Water Deliveries into SSJMUD

OCTOBER 2023

Figure 1






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 Caratan Recharge Facility

 Friant- Kern Canal

 Inlet from FKC to Caratan Recharge Facility

Zachary Ave

Zachary Ave

Schuster Rd

Pond Inflow  
Rate: 5-10cfs

Lake Woollomes



## Evaluation Criteria

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### Sub-Criterion A1.a: Adds to Available Water Supplies

- How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

By enhancing groundwater recharge during wet periods, the Project will boost drought resilience and operational flexibility for the District and the region. Previously, SSJMUD conducted a District-wide feasibility study to identify potential locations for in-district, direct recharge facilities. In addition to the District-wide study, SSJMUD conducts site-specific groundwater recharge evaluations to confirm the findings of the study when evaluating potential sites to acquire. Although the District has recently added groundwater recharge facilities, in 2023, SSJMUD needed additional recharge facilities to utilize all the wet year water supplies available. As part of its efforts to develop its own groundwater recharge capacity, 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).

Because the District has conveyance connections from the Friant-Kern Canal (FKC) to deliver CVP water to their distribution system, adding recharge ponds in-District adds recharge capacity and reduces the reliance on neighboring 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 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 storage 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 District.

The expected operational 'life' of the Project 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.

- What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

The additional average annual water supply volume of 5,000 AFY (560 AFY is not included because that is due to demand reduction because 160 acres of irrigated crop was taken out of production) represents 8 percent of the 2013 to 2022 10-year average delivery of Class 1 and 2 supplies (5,000AFY/62,512 AFY).

- What is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, state this and provide the average benefit over ten years or longer including dry years).

The estimated average annual volume of additional supply is 5,000 AFY. Given an estimated recharge rate of 0.5 feet per day for a recharge area of 144 acres (160 acres x 0.9 effective area) and estimating water available for six months in four out of 10 years (144 Acres x 0.5 ft/day x 30 days/month x 6 months/year x 4/10 wet years = 5,184 AFY), or approximately 5,000 AFY over 10 years, including dry years. The average annual estimate of 5,184 AFY includes four wet years with an average 10- year annual recharge of 50,000 AFY.

Additionally, there is a conservation component from conserving groundwater resulting from land fallowing (converting land from growing crops to recharge ponds) which is estimated to be 160 acre-feet per year (160 acres x 3.5AF/Ac of ET). The total Project yield to the district is 5,560 AFY, this consists of 5,000 AFY of water recharged and 560 AFY of water saved.

- 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 capacity. Project benefits include:

1. Improved Water Flexibility: The increased recharge capacity will improve the District's water supply flexibility especially during periods of wet, high demand, and drought. Higher recharge 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 local infrastructure was unable to efficiently capture and manage these abundant water resources, primarily due to the inadequacy of the existing recharge capacity. This situation highlighted the District's need for more recharge facilities to effectively accommodate wet year water flows. With a recharge capacity of 0.5 ft/day the Caratan Recharge Facility increases the District's recharge capacity to efficiently capture flows for recharge to satisfy irrigation demands.
2. Improved Water Security: The Caratan 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"*, as shown in Appendix C. To facilitate the receipt of uncontrolled releases during wet years, the District must enhance its in-district capacity to enable effective delivery for recharge.  
The District is also preparing for expected increase of contract water deliveries once the FKC is restored 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 as aged infrastructure, localized

seepage through embankments, and regional land subsidence. Through the Friant-Kern Canal Middle Reach Capacity Correction Project, the Friant Water Authority will restore 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 in the District 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 recharge capacity 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 recharge capacity to help meet 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, SSSJMUD, in conjunction with neighboring districts, has developed a management area plan that focuses on groundwater sustainability in the region. Part of this plan is a series of projects and management actions developed to be implemented by the District to maintain groundwater sustainability. Expanding their recharge capacity within the District significantly supports their GSPs 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.

## **Sub-Criterion A2: Environmental & Other Benefits**

### **Sub-Criterion A2.b: 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 proposed project primarily focuses on enhancing drought resiliency through the construction of recharge ponds, specifically targeting groundwater recharge. While it may not be directly designed to address hazards such as wildfires or floods, it can indirectly contribute to mitigating these natural hazards. By replenishing local aquifers and increasing groundwater levels potentially reducing the severity of wildfires in the region. Additionally, the recharge ponds can help manage flood risk on the San Joaquin River by providing a controlled space for excess surface water delivered by the Friant Kern Canal, safely conveyed to recharge during heavy rainfall events, minimizing the potential for flooding in downstream areas from the Friant Dam. While not the project's primary objective, these natural hazard risk reduction benefits can be valuable collateral outcomes of the proposed project.

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

A recharge basin can be classified as green infrastructure due to its environmentally friendly and sustainable characteristics. Green infrastructure refers to natural or nature-based systems designed to manage stormwater and provide multiple ecological benefits. In the case of a recharge basin, it mimics natural hydrological processes by allowing rainwater or surface water to infiltrate into the ground, replenishing groundwater supplies. This natural filtration and groundwater recharge process improves water quality and reduces the risk of flooding. A recharge basin meets the criteria for green infrastructure by promoting sustainable water management, enhancing groundwater levels, and improving the overall resilience of rural, DAC communities.

The project will also benefit the communities of Delano and McFarland by providing a diversion facility that will divert flood flows for recharge, reducing flood risks and replenishing groundwater levels. By diverting and storing floodwater flows, the Caratan Recharge Facility plays a vital role in protecting local communities from the devastating impact of flooding. Flows will be diverted from the communities populated areas, reducing risk to damage to homes, roads, agricultural fields, and critical infrastructure. This can lead to a significant decrease in the financial and emotional toll on the affected communities, creating a sense of security and stability. Furthermore, the project's impact extends to safeguarding agricultural areas, which are often at-risk during periods of heavy rainfall. By diverting floodwaters away from these regions, the project can protect crops, livestock, and agricultural infrastructure, ensuring food security and supporting the local economies. In addition to protecting agricultural land, the project also helps in preserving critical infrastructure such as roads, bridges, and other vital structures. By preventing excessive water from causing erosion or structural damage, it ensures the smooth functioning of transportation networks and other essential services.

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

The proposed Project aims to increase capacity for recharge, 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. Conveying uncontrolled releases towards an in-district recharge facility would make the water available for future beneficial use. Recharged water increases groundwater levels which lowers the pumping lift and energy required to return banked water during drought operations, reducing greenhouse gases.

Water quality problems, notably nitrates, arsenic, and TCP contamination, are widespread in the San Joaquin Valley, posing significant risks to drinking and irrigation water. Investing in increased groundwater recharge, is vital to capture more surface water, raise groundwater levels, and enhance water quality by recharging good quality water.

- 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?



This project protects water supplies and associated uses by coordinating management of surface water capture and groundwater recharge, thereby boosting overall storage, ensuring a stable water supply for crops. This stability is crucial in maintaining food security and economic stability in local farming communities. Southern San Joaquin Municipal Utility District relies heavily on local agriculture. The San Joaquin Valley is California's agricultural region and irrigated farming is the region's main economic driver. As local water supplies become limited, stress on the region's water system is growing. In subsequent years, intensive drought has resulted in excessive pumping that has lowered the underlying groundwater table in the District. At present, the District's only source of irrigation water is their surface supply from the Central Valley Project. Capturing flood flows delivered via the Friant Kern Canal is one approach to expand water supplies.

- Does the proposed project contribute to climate change 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 have led to a range of challenges that threaten the region's agricultural and disadvantaged communities (DACs). 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 A2.b: Environmental Benefits**

- Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species?

The FKC serves as a channel for transporting surface water stored in Millerton Lake behind the Friant Dam south to CVP contractors. During peak runoff periods, uncontrolled floodwater is released from Millerton Lake. Increased in-district recharge will allow SSJMUD to deliver these unscheduled releases for recharge and mitigate flood impacts to downstream users in the San Joaquin River System. Some flood impacts on endangered species in the San Joaquin River system caused by floods include:

1. Disruption of nesting grounds: Floods can wash away or inundate the nesting grounds of endangered species, leading to a decline in their populations.
2. Alteration of river morphology: High-intensity floods can modify the structure of riverbanks and alter the physical characteristics of the river, impacting the habitat of various aquatic species.
3. Changes in water quality and temperature: Floods can lead to changes in water quality and temperature, affecting the survival and reproductive patterns of endangered aquatic species in the San Joaquin River system.
4. Displacement and loss of habitat: Flood events can displace and cause the loss of critical habitats for endangered species, affecting their ability to find food, shelter, and breeding grounds.<sup>1</sup>

By helping to manage flood flows downstream of the Friant Dam, the Project directly contributes to the well-being of the species in the San Joaquin River system and indirectly contributes to the well-being of the species residing in this region.

- What are the types and quantities of environmental benefits provided, such as the types of species and the numbers benefited, acreage of habitat improved, restored, or protected, or the amount of additional stream flow added? How were these benefits calculated?

The Caratan Recharge Facility will inadvertently result in the intermittent formation of wet ponds, essentially creating temporary wetlands. These wetlands serve as critical habitats for various migrating bird species, attracting a diverse array of wildlife. When these basins contain water over time, they foster the growth of aquatic plants, further enhancing their appeal to the migratory birds.

The wetland ecosystem acts as a crucial resting area for several migratory bird species, particularly the Tree Swallow (*Tachycineta bicolor*) and the Lawrence's Goldfinch (*Spinus lawrencei*), both of which constitute a significant portion of the avian population migrating through the Tulare Basin Region. This ecosystem offers these birds a resting place, providing abundant food sources during their migratory journey.<sup>2</sup> The unique combination of shallow waters and vegetation in the recharge basin caters to the specific requirements of these birds, thereby contributing to the broader conservation of biodiversity in the region.

### **Sub-Criterion A2.c: Other Benefits**

- Will the project assist States and water users in complying with interstate compacts?

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<sup>1</sup> Elliott L. Matchett, Joseph P. Fleskes. Waterbird Habitat in California's Central Valley Basins Under Climate, Urbanization, and Water Management Scenarios. *Journal of Fish and Wildlife Management* 1 June 2018; 9 (1): 75–94. doi: <https://doi.org/10.3996/122016-JFWM-095>

<sup>2</sup> Deluca, William & Meehan, Tim & Seavy, Nat & Jones, Andrea & Pitt, Jennifer & Deppe, Jill & Wilsey, Chad. (2021). The Colorado River Delta and California's Central Valley are critical regions for many migrating North American landbirds. *Ornithological Applications*. 123. 10.1093/ornithapp/duaa064.

The project directly aligns with the targets and aims of promoting sustainable groundwater outlined in California's SGMA regulations. SGMA's primary focus is to address concerns associated with groundwater depletion, land subsidence, and the deterioration of water quality within the state. By mitigating these challenges, promoting sustainability can help minimize potential conflicts with neighboring states that share the same water sources. This proactive management approach can contribute to a more stable and cooperative relationship between California and its neighboring states regarding water usage.

- Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)? Describe the associated sector benefits.

Implementing this Project will increase surface water recharge to groundwater in an area with predominately agriculture land use which also has two rural, disadvantaged communities. The communities include several industrial processing facilities that rely on groundwater for their water source and share this resource with the local environmental, recreation, and drinking water needs. Adding recharge facilities with the ability to recharge large quantities of wet year flood flows can have profound benefits for the agriculture sector and these community needs. Increased recharge enhances availability of water for irrigation during drought, ensuring a consistent and reliable water source for crops. This reliability protects against crop failures and economic losses the community is affected by during extreme drought driven by climate change. Moreover, the Project will allow more flexibility for delivery of surface water supplies and enhance reliability of groundwater supplies.

- Will the project benefit a larger initiative to address sustainability?

The project will benefit the Sustainable Groundwater Management Act (SGMA), a California state-wide initiative. SGMA was implemented to achieve groundwater sustainability by planning and building projects to resolve the challenge of over pumping leading to declining groundwater levels, therefore promoting sustainable groundwater management. The proposed Project focuses on enhancing 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 overdrafted 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) to create and execute a Management Area Plan (MAP) written in conjunction with and in support of a basin-wide Groundwater

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

### **Evaluation Criterion B—Planning and Preparedness (20 points)**

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- Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to address drought will receive the most points under this criterion.
  - *Does the drought plan contain drought focused elements (e.g., a system for monitoring drought, drought projections that consider climate change, identification of drought mitigation projects, drought response actions, and an operational and administrative framework)?*
  - *Describe how the drought plan includes consideration of climate change impacts to water resources or drought.*

SSJMUD is member of the Poso Creek IRWM Group (Group). The Group entered into an agreement with Reclamation in 2019 to develop a Drought Contingency Plan (DCP). The plan was approved by Reclamation and adopted in February 2023. The DCP includes a vulnerability assessment included in the plan to assess current and future drought conditions in the Region. The DCP leads to better management of the water resources in the region and to mitigate effects of future drought while accounting for future effects of climate change.

The DCP includes sections on drought monitoring, a vulnerability assessment, mitigation actions, and response actions. Within the plan, Drought Monitoring describes the drought severity level of the Poso Region by assessing three factors: (1) projections of water supply allocations for various sources in the Region such as the Central Valley Water Project, which Group members rely on for surface supplies, (2) minimum thresholds for groundwater level conditions as established in the SGMA Groundwater Sustainability Plans (GSP), 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 based on projected climate change. Mitigation actions were developed for each District in the Poso Creek Region.

This DCP considers climate change by recognizing that droughts are expected to become more frequent and intense due to climate change. It acknowledges that climate change has led to an acceleration of natural climate change due to increased greenhouse gas emissions. The plan also considers climate projections and their potential effects on the region's water supplies. It mentions that climate change models focus on the generalized effects on the region's climate, such as changes in timing, volume, and nature of precipitation. The plan includes climate change projections for 2030 and 2070, as well as information from the Integrated Regional Water Management Plan Update and the Groundwater Sustainability Plan of the Kern Groundwater

Authority. The projections show a reduction in volume and reliability of surface water supplies, which will require increased reliance on groundwater to meet irrigation demands. The plan also mentions that mitigation actions have been developed to address drought vulnerabilities caused by climate change, including enhancing conveyance, expanding recharge capacities, and increasing storage of surplus supplies. These mitigation actions aim to increase operational flexibility, reduce reliance on groundwater, and encourage better water management to build long-term drought resilience. Overall, the plan considers climate change by recognizing its impact on water supplies and implementing measures to address its effects.

- When was the plan developed and how often is it updated?

The Drought Contingency Plan component in compliance with Reclamation was finalized in 2022 and adopted in early 2023, with an update on an as needed basis, or at least every five years.

- Was the drought plan developed through a collaborative process?

The Poso Creek DCP was developed in collaboration with other members of the Group. Table 3 lists the member agencies of the IRWM group. 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 was established by Poso Creek group members and various stakeholder, including SSJMUD, to develop the Final DCP and carry out action developed under the Communication and Outreach Plan. The C&O Plan identifies a plan to conduct stakeholder meetings and includes public/stakeholder input for work to be conducted under the DCP.

The development of the Poso Creek DCP and the district-specific portions of the DCP will also consider drought monitoring and response actions identified in the Groundwater GSPs prepared for compliance with California's SGMA. The elements of the DCP include:

1. **Drought monitoring** for predicting the probability of future droughts or confirming an existing drought and implementing appropriate response actions.
2. **Vulnerability assessment** to evaluate risks and impacts of drought to critical resources and the factors contributing to those risks.
3. **Mitigation actions** (drought resiliency actions) that will build long-term resiliency to drought and mitigate risks posed by drought.
4. **Response actions** that can be quickly implemented during specific stages of a drought, manage the limited supply, and decrease the severity of immediate impacts.
5. **Operational and administrative framework** to identify who is responsible for actions necessary to implement each element of the DCP.
6. **Plan update process** to monitor, evaluate, and update the DCP.



The Project provides SSJMUD recharge continuity and additional recharge capacity by way of capturing wet year, un-storable, uncontrolled releases of CVP water into storage using recharge basins. Later, during dry and critical year type, the stored water is pumped from the aquifer for piped delivery to in-district irrigation distribution systems to meet irrigation demand.

**Table 3. Poso Creek RWMG Member Agencies**

<b>Member Agencies</b>	
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)
Northwest Kern Resource Conservation District (NWKRCDC)	Southern San Joaquin Municipal Utility District (SSJMUD)

- Describe how your proposed drought resiliency project is supported by an existing drought plan.

SSJMUD collaborated with other members of the Poso Creek Group to highlight critical drought vulnerabilities in their region. Relevant sections of the DCP are included in Appendix A. The core goal of the Plan is to build long-term drought resiliency for the region in advance of a drought crisis. The projects seek to address the plans 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) Improve effectiveness of water delivery. To achieve the goal the plan, each District in the RWMG has identified mitigation actions and prioritized those that would maximize the regions capacity to recharge and bank water locally during wet periods. In support of this effort, SSJMUD developed proposed projects and response actions for long term drought planning. These projects, including the Caratan Recharge Facility are identified, and prioritized in the 2022 DCP Plan Update as a mitigation action. The project implements a supported need prioritized in the DCP.

### **Evaluation Criterion C—Severity of Actual or Potential Drought or Water Scarcity Impacts to be addressed by the Project (15 points)**

- Describe recent, existing, or potential drought or water scarcity conditions in the **project area**.

According to the U.S. Drought Monitor information, the most recent and severe drought Kern County faced, which is the area in which the District is located, was from 2014-2016 with “Exceptional Drought” conditions all three years. In Figure 4, the 2022 Drought Monitor map of California shows the Kern County area being in “Extreme Drought” and with variable conditions from “Moderate Drought to “Severe Drought” observed in the past year. Although drought

conditions have decreased in recent years, projected climate change estimates by the U.S. Global Change Research Program indicate that drought conditions will only become more frequent and severe.<sup>1</sup> Climate models project that if global emissions of greenhouse gases continue to grow, summertime temperatures in the United States that ranked among the hottest 5% in 1950-1979 will occur at least 70% of the time by 2035-2064. Heavy precipitation events will likely be more frequent, with heavy downpours that currently occur about once every 20 years are projected to occur between twice and five times as frequently by 2100.<sup>3</sup>

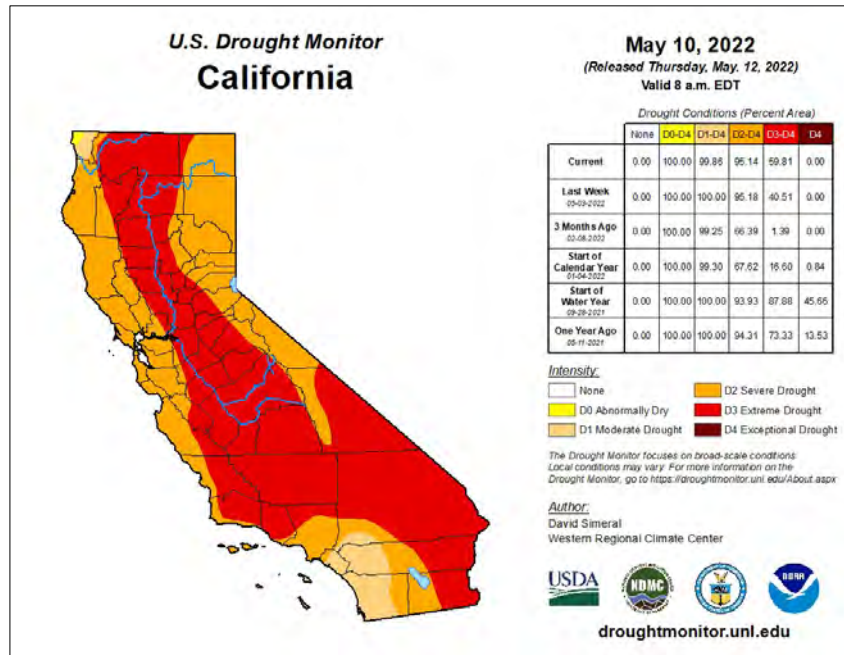
The state and region have experienced a historic drought from 2013 to 2022. During drought conditions, SSJMUD and other Friant CVP contractors received up to 20% of their allocation. The recent severity of water scarcity is demonstrated by comparing the average FKC deliveries to SSJMUD for the 10-year period from 2013 through 2022 (the last complete calendar year) to the preceding 20-year period (1993-2012). The 2013-2022 calendar year average annual deliveries to SSJMUD were 62,512 acre-feet compared to 106,933 acre-feet for the period 1993-2012, a reduction of 42 percent. Despite this large reduction over a 10-year period, three years (2017-2019) in the center of the period average FKC deliveries of 105,108 acre-feet, demonstrated the large swings in precipitation seen in recent years. In two of those years, un-storable, uncontrolled releases were available that SSJMUD could have recharged if the recharge basins and high-capacity conveyance had been available. During these conditions, growers within the District must then rely on groundwater to meet their crop irrigation demands, which has caused a large decline in groundwater levels. While they have not yet reached a condition where the District would have to take action to fallow land and implement other water conservation measures, continued groundwater pumping without the ability to replenish extracted water is not sustainable over the long-term.

California has experienced record precipitation in 2023, reducing the drought conditions to “Abnormally Dry” or “None”, see Figure 5. Despite recent rain events, the state remains cautiously aware of the threat of prolonged drought conditions. While the increased rainfall and snowfall have provided temporary relief to water reservoirs and ecosystems, it's essential to recognize that due to climate change California's hydroclimate is historically prone to extended periods of drought. Climate change projections suggest a future with more frequent and severe drought events.

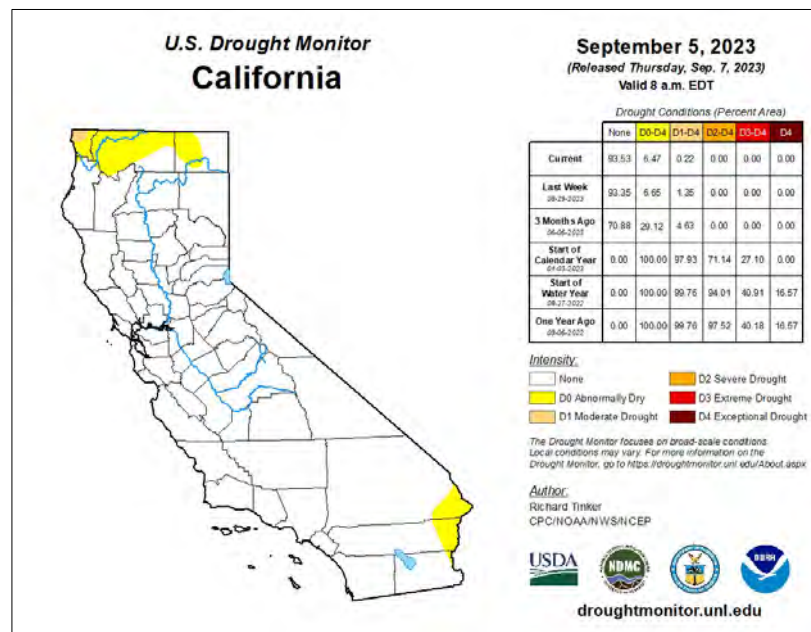
Due to these varying climate conditions, California continues to prepare and plan for a future that includes the potential for recurring water shortages, emphasizing the importance of water conservation, sustainable resource management, and resilient infrastructure to navigate the challenges posed by an uncertain condition.

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<sup>3</sup> Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: Climate Change Impacts in the United States: The Third National Climate Assessment. U.S. Global Change Research Program, 841 pp. doi:10.7930/J0Z31WJ2



**Figure 4: U.S. Drought Monitor Map 2022**



**Figure 5: U.S. Drought Monitor Map 2023**

- What are the ongoing or potential drought or water scarcity impacts to specific sectors in the **project area** if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation, tourism, forestry, etc.), and how severe are those impacts? Impacts should be quantified and documented to the extent possible. For example, impacts could include, but are not limited to:

In the preparation of its SGMA-compliant Management Area Plan (SSJMUD, 2020) as part of the Kern Groundwater Authority's Groundwater Sustainability Plan (KGA GSP, KGA, 2020),

SSJMUD identified that a “no projects” condition in the District would lead to a projected continued groundwater overdraft. Without any groundwater recharge projects in the District, SSJMUD is projected to experience annual groundwater overdraft ranging from 400 AF to 18,000 AF; the value in any given year is dependent on the water year type.

The primary industry in the project area is agriculture with permanent tree crops, such as deciduous fruits and nuts, and grapes, the primary crop. If no projects are built, then the District would be required to fallow land to address the projected overdraft. With an average annual consumptive use of applied water of 3 AF/acre, SSJMUD would be required to take between 134 acres to 6,000 acres out of production.

In addition to the direct negative impacts to irrigated agriculture in the District, if no projects are undertaken, additional impacts will be realized by the cities in the form of increased pumping costs due to declining groundwater levels. Private water wells used to supply domestic water to homes in rural portions of the District would be more severely impacted by declining groundwater levels than the cities’ supply wells because rural domestic wells are typically drilled to shallower depths than municipal or agricultural supply wells.

#### **Evaluation Criterion D—Presidential and DOI Priorities (15 points)**

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##### **Disadvantaged or Underserved Communities**

In the surrounding area decreases in groundwater levels typically result in an increase in pumping costs. As the groundwater levels decline, the pumping equipment needs to extract water from greater depths. This increased pumping depth results in higher energy consumption, leading to elevated electricity or fuel costs for operating the pumps. Additionally, the decline in groundwater levels often causes a reduction in well efficiency, necessitating repairs or adjustments to the pumping infrastructure, which can incur additional maintenance costs. The need for more powerful pumps or additional wells to meet water demands exacerbates the overall operational costs, impacting the financial burden of landowners that depend on well water supplies.

The project will in-directly benefit the adjacent cities of McFarland and Delano because in-district groundwater banking activities and increased importation of surface supply for direct recharge and for agricultural use will conserve groundwater and maintain groundwater levels. With the District managing higher groundwater levels and increasing the groundwater storage groundwater quality is improved. The City of Delano is also a supportive stakeholder of the Project due to its significant contribution to groundwater sustainability, which is a critical concern for its community that heavily relies on groundwater resources. This Project ensures a more secure and reliable source of water for their residents, thereby reinforcing our community's resilience during drought.

The Cities of Delano and McFarland are classified by the State of California as Severely Disadvantaged Communities (SDAC). A SDAC is a community whose MHI is less than 60% the statewide MHI. As of 2021, the statewide MHI in California was \$84,097; therefore, the threshold for classification as a SDAC in 2021 was \$50,458. According to the US Census Bureau, the City of Delano’s MHI was \$48,344 in 2021; McFarland’s was \$36,586.

## **Evaluation Criterion E—Readiness to Proceed and Project Implementation (10 points)**

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- 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. Milestones may include, but are not limited to, the following: design, environmental and cultural resources compliance, permitting, construction/installation.

The Project will be implemented through a structure based on project milestones. Seven tasks are defined below to accomplish the Project work and are organized to parallel to Budget and Schedule items.

Task 1: Grant Administration - Activities include coordination of all Project activities, including budget, schedule, communication, and grant and cost-share administration including preparation of invoices and maintenance of financial records.

Task 2: Project Reporting - Reports on the Project financial status will be submitted on a semiannual basis over the two-year period. A Final Project Report will be prepared upon Project completion.

Task 3: Project Design – The District has a designed layout for the proposed Project with final design to be completed based on the survey that has the slopes and elevations of the Project Site. All design work is anticipated to be completed in 2024, prior to the start of construction in 2025.

Task 4: Environmental Documentation and Regulatory Compliance –An environmental document that meets the requirements of CEQA and NEPA will be prepared for the Project.

Task 5: Permits and Approvals - It is noted that the District is not subject to the County’s or City’s jurisdiction with regard to building and grading permits relative to water resource projects. It is anticipated that construction will occur within the boundary of the District’s property.

Task 6: Project Construction - Once design is completed, and necessary environmental documentation and permits are secured, SSJMUD, with the assistance of the Engineering Consultants, will conduct construction contracting, consisting of contractor bidding and selection (as necessary). A Contract for construction of the Project is to be competitively bid. Accordingly, the work will include publishing the notice bid solicitation; conducting a job-site tour for prospective bidders; responding to contractors’ questions; issuing addenda to the specifications if required; opening and evaluating bids, including costs, required bonds, suppliers, and subcontractors, and checking bidder’s references and experience successfully executing this type of work; awarding of contract; and issuance of the Notice to Proceed.

Task 7: Construction Management and Administration – Construction Management and Administration involves everything from the advertisement for bids from qualified construction firms to filing a Notice of Completion for the Project works and review of “As-Builts” drawings. Construction management activities can generally be categorized as field observation and contract administration, whereas construction administration includes items such as the Notice to



Proceed, pre-construction conference, correspondence with the Contractor, submittal review, progress payments, periodic meetings with the Contractor, Contract Change Orders, etc.

The proposed Project will be implemented under the direction of District Manager, Roland Gross. A consultant will provide design, construction management, administrative, reporting assistance, and coordination with local firms, as needed. Operations Manager, John Bonkosky will have responsibility for overall Project Management.

The District will work with the USBR to address any environmental compliance or planning documentation, while adhering to project reporting and update requirements as defined in the potential grant agreement. Any necessary permits and approvals will be obtained prior to the start of construction activities. A Grant Schedule estimating the phases and milestones for completion of the work is shown in Table 4. Project tasks and durations are based on previous engineering experience.

**Table 4. Project Schedule/Milestones**

Milestone	Start	Finish
Signed Agreement	October 2024	October 2024
Task 1- Grant Administration	October 2024	October 2026
Task 2- Project Reporting	November 2024	October 2026
Task 3- Project Design	November 2024	January 2025
Task 4- Environmental Documentation	November 2024	April 2025
Task 5- Permits and Approvals	November 2024	May 2025
Task 6- Project Construction	June 2025	December 2025
Task 7- Construction Management and Administration	May 2025	March 2026

- Describe any permits or approvals that will be required (e.g., water rights, water quality, stormwater, or other regulatory clearances). Include information on permits or approvals already obtained. For those permits and approvals that need to be obtained, describe the process, including estimated timelines for obtaining such permits and approvals.

The Project is located within the District’s rights-of-way, and the land of growers within the Districts. All the required modifications to the land are within the experience of the District and its consultants. As design plans and specifications are further developed, the District will engage Reclamation and local agencies to ensure all required permits, reviews, and special approvals are met so that the integrity of the lands intercepted by the pipeline replacement and recharge basin construction are not compromised.

In addition to and accordance with the permitting and approval concerns stated in Task 5 of the Project Work (Section 1.3.1), the following paragraphs detail specific points of the District’s commitment to obtaining all relevant permits and approvals. a) “The District, at its sole cost and expense, comply with all laws, rules, ordinances and regulations of all governing bodies having jurisdiction over the work, obtain all necessary permits and licenses therefore...” This would

include, but is not limited to, such things as any required NPDES permitting and the preparation of a Storm Water Pollution Prevention Plan for construction of the Project. b) A pre-activity survey will be ordered and conducted by a qualified biologist shortly before the start of construction; this would include, but is not limited to, protocol-level surveys for the San Joaquin Kit Fox and the Western Burrowing Owl (or other local endangered species).c) 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 design the recharge basin ponds, levees, inlet, flow meter, and turnouts. The initial design of the recharge ponds with estimates on quantities is complete; the final design will be completed based on the survey.

- Describe any land purchases that must occur before the project can be implemented.

The Project site parcel purchase was completed by the District in July 2023

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

The recharge facility will be located on District owned land, as such, no new policies or administrative actions are required to implement this Project.

## **Evaluation Criterion F—Nexus to Reclamation (5 points)**

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- Does the applicant have a water service, repayment, or O&M contract with Reclamation?

Yes, The District was formed for the purpose of entering into a contract for purchase and distribution of water from the Central Valley Project (CVP).

- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

Yes, SSJMUD is a registered CVP contractor and receives both Class-1 and Class-2 allocations through the FKC. The proposed Project will add recharge capacity to the District by establishing an in-district spreading facility, which will bank CVP water from the FKC in SSJMUD and does not require using any of the existing conveyance; a 36-inch diameter pipe will be installed to an existing concrete structure directly connecting the inlet of the site to the FKC. Surface water can be delivered directly from the FKC to the recharge facility, without using any existing mainline into the District conveyance system. This is a direct connection to CVP water from the FKC that would now be available during wet periods that was otherwise not available to the District.

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

Yes. The Project will benefit Reclamation's wet year water management by providing another home for flood water to be recharged; this recharge capacity will reduce flood risk by recharging uncontrolled, un-scheduled releases benefiting groundwater sustainability. In addition, this Project helps all local Friant-CVP contractors. The significant decline in the Friant-Kern Canal's conveyance capability, resulting from the effects of excessive groundwater extraction, has led to unstable deliveries of surface water. By supporting groundwater recharge through the Caratan Recharge Facility the project aims to mitigate subsidence issues, which will support all the Friant CVP contractors.

- Is the applicant a Tribe?

No, the applicant is a municipal utility district.

### **Evaluation Criterion G—Stakeholder Support for Proposed Project (5 Points)**

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- Describe the level of stakeholder support for the proposed project. Are letters of support from stakeholders provided? Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project? Explain whether the project is supported by a diverse set of stakeholders, as appropriate, given the types of interested stakeholders within the project area and the scale, type, and complexity of the proposed project. For example, is the project supported by entities representing agricultural, municipal, Tribal, environmental, or recreation uses?

As previously mentioned, SSJMUD is a member of the Poso Creek IRWM Group, which consists of multiple neighboring water districts in Kern County. The proposed Project, which is included in the latest update of the Poso Creek IRWM Plan, plays a crucial role in enhancing the efficient delivery of surface supplies to a recharge basin and improving operational flexibility and efficiency within the region. This Project reflects extensive planning and dedicated efforts, aligning with the overarching objectives of the IRWM Group and demonstrating the IRWM Program's emphasis on integrated planning for regional sustainability. Furthermore, the Project has also been recognized within the region's DCP. Appendix B contains a Letter of Support from the Group, further endorsing this initiative.

The City of Delano is also a supportive stakeholder of the Project due to its significant contribution to groundwater sustainability, which is a critical concern for its community that heavily relies on groundwater resources. This Project ensures increased recharge capacity which leads to supplemental groundwater supplies that will provide a more secure and reliable source of water for their residents, thereby reinforcing our community's resilience during drought. The Project's objectives and benefits directly align with the interests of both agricultural and municipal sectors. Appendix B contains a Letter of Support from the City of Delano, advocating in support of the Project.

## Project Budget

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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 5.

**Table 5. —Summary of Non-Federal and Federal Funding Sources**

<b>Funding Sources</b>	<b>Funding Amount</b>
Non-Federal Entities	
1. Southern San Joaquin Municipal Utility District	\$2,336,446
<i>Non-Federal Subtotal:</i>	<i>\$2,336,446</i>
<b>Requested Reclamation Funding:</b>	<b>\$2,000,000</b>
<b><i>Total Project Funding:</i></b>	<b><i>\$4,336,446</i></b>



## Budget Narrative

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The total Project budget for the Caratan Recharge Facility (Project) is estimated at \$4,336,446 with \$2,000,000 in requested grant funds (Federal Cost Share) and \$2,336,446 in Non-Federal Cost Share funds. The approach has been reflected in the budget estimates. The total requested grant funds amount to about 46 percent of total project costs, with the remainder (54 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 budget proposal consists of two contracts: one for an engineering consultant, and one for construction.

#### *Engineering Consultant*

The Engineering Consultant will provide assistance with project grant administration, grant reporting, environmental compliance and regulatory compliance. For cost estimating purposes, it was assumed that the Project will require the same effort as a past comparable project.

Grant Administration includes coordination of all Project activities, such as budget and schedule; coordination with Reclamation; and cost administration. Grant reporting includes providing required progress, final, and financial reports. Environmental and Regulatory Compliance will include coordination with Reclamation to prepare of all necessary environmental documentation.

A rate sheet of District Rates and Engineering Consultant's Fee schedule is provided in the Budget Detail. Hourly breakdown of scope of work is based on the level of effort required on past comparable projects and the District's experience on projects of similar levels of effort. The

District maintains a Purchasing Policy. An hourly breakdown for the estimates provided for each item is included in the Budget Detail.

### ***Construction***

#### ***Engineering Consultant***

The Engineering Consultant will be contracted for design, bidding, and construction management. The Budget Detail uploaded onto grants.gov provides a breakdown of estimated hours by rate for anticipated staff for each task. For cost estimating purposes, it was assumed that the Project will require the same effort as a past comparable project.

Design Support is estimated to require the same effort as a past comparable project, SSJMUD's Regan Recharge Facility. Final Design costs was quoted in 2022 at approximately \$180,000. In addition, costs were estimated for Construction Bidding which includes preparation of specifications and drawings, coordination of the bid process, bid proposal analysis, and contract award assistance, also based on the Regan Recharge Facility that was bid and is now under construction in 2023. Cost includes Bid Advertise, Prebid tour, Agenda Meeting Minutes, Addenda, Bid Opening, Bid Proposal Analysis and NOA/NOP. Construction Management will include oversight of construction and progress payment support. Cost includes time for weekly meetings for construction duration and for monthly pay applications and field observations. Project Permitting and Approval Processing includes preparing and compiling all necessary permit application documents, including forms, drawings, technical reports, and supporting documentation. The Budget Detail provides a breakdown of estimated hours by rate for anticipated staff.

#### ***Construction Contract***

It is anticipated that a single "furnish and install" contract will be awarded for all elements of construction, including mobilization, demobilization, water supply, traffic control, turnout connections, headgates and structures, materials and supplies, equipment, and required construction specific permits. As required for the Project, CEQA and NEPA environmental compliance will be obtained prior to any ground disturbance activity by a consultant and are included in a separate contract.

The estimate for Project Wide Items provided in the Construction Components are based on the bid abstracts from the comparable Shafter Wasco Irrigation District's Kimberlina project contract, the North Kern Water Storage District's NK-619 project contract and proposals from suppliers.

This cost is determined to be fair and reasonable as it is based on a contract of a similar nature that was awarded through a public, competitive bidding process. An Engineer's Opinion of Cost (EOPC) estimate was provided by an engineering consultant and can be found 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 2022.

### **g. Other Expenses**

No Other Expenses are included in the Budget Proposal.

### **h. Indirect Costs**

No Indirect Costs are included in the Budget Proposal.

## **Appendix B – Letters of Support**

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CITY HALL  
1015 ELEVENTH AVENUE  
POST OFFICE BOX 3010

DELANO, CALIFORNIA 93216-3010

(661) 721-3300  
(661) 721-3317 TDD  
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MAYOR PRO TEM

Liz Morris  
Mario Nunez, Jr.  
Veronica Vasquez

Maribel G. Reyna  
CITY MANAGER

October 17, 2023

Roland Gross  
General Manager  
Southern San Joaquin MUD  
P.O. Box 279  
Delano, CA 93216

**RE: Letter of Support for Caratan Groundwater Recharge Facility (Project)**

Dear Grant Review Committee:

The City of Delano is writing to express strong support for the Southern San Joaquin Municipal Utility District's proposed, *Caratan Groundwater Recharge Facility (Project)*. Please accept this letter of support in favor of the application for funds from the Bureau of Reclamation.

The City of Delano acknowledges and supports SSJMUD's initiative, aiming to secure funding for the enhancement of sustainable groundwater recharge through conversion of 160 acres to local recharge basins. SSJMUD's proposed Project under your consideration will help continued avoidance of drought vulnerability while also providing multiple benefits to improve and support local management of groundwater supply and quality to our region.

As a State designated disadvantaged community (DAC), the effect this grant funding will have on City of Delano is profound. I support the State prioritizing DAC projects, like this one, where additional resources will have the biggest impact.

For these reasons, I fully support the *Caratan Groundwater Recharge Facility (Project)* grant application, if you have any questions or concerns, please contact me at 661-720-2269.

Sincerely,

Maribel Reyna, City Manager  
City of Delano

CITY OF DELANO



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

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

Re: Letter of Support for Caratan Recharge Facility

Dear Mr. Gross,

I am writing this letter on behalf of the Poso Creek Integrated Regional Water Management (IRWM) Group to express our strong support for the Southern San Joaquin Municipal Utility District's (SSJMUD) *Caratan Recharge Facility* project (Project). The development of new recharge facilities, such as the *Caratan Recharge Facility*, plays a pivotal role in addressing the critical water resource challenges facing our region and advancing groundwater sustainability.

Project implementation will serve as a crucial means to replenish underground aquifers, supporting our resilience during drought periods and mitigating the impact of water scarcity in our area. The Poso Creek IRWM Group comprises of participants and stakeholders, including water service districts, government agencies, and local organizations, all of which represent the interests of agriculture, the environment, and our community. A reliable and sustainable water supply is essential for local agriculture and environmental well-being.

SSJMUD's project aligns directly with the objectives outlined in our Drought Contingency Plan (DCP). Specifically, it seeks to enhance water supply reliability and promote conjunctive use efforts in line with the Sustainable Groundwater Management Act (SGMA). Our support for this project highlights its potential to benefit not only our group but also SSJMUD and others within the region.

We hope that our endorsement can be supportive in your efforts to secure grant funding to advance this project. Should the funding agency wish to discuss our interest and support, please do not hesitate to reach out.

Sincerely,

Kris Lawrence  
Chairman, Poso Creek IRWM Group  
[klawrence@swid.org](mailto:klawrence@swid.org)  
(661) 758-5369