WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2024

Funding Opportunity No. R24AS00007

Applicant
North Kern Water Storage Districts
33380 Cawelo Avenue
Bakersfield, CA 93308

Return Capacity Improvements

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1.1 Executive Summary

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Date	November 7, 2023
Project Name	Return Capacity Improvements
Applicant Information	
Name	North Kern Water Storage District
City, County, State	Bakersfield, Kern County, California
Applicant Category	Category A – Water District
Funding Group	Funding Group III

North Kern Water Storage District (North Kern, District, Applicant) proposes to construct *Return Capacity Improvements* (Project), consisting of drilling one well and installing a discharge pipeline to add to its existing recovery network. The Project is a *Task B: Increasing the Reliability of Water Supplies through Groundwater Recovery* project that will increase drought resiliency by improving return and conveyance capacity of previously banked water to neighboring districts. The Project will be constructed in the District's service area near the City of Bakersfield in Kern County, California. This area is highly susceptible to drought, experiencing drought seven out of every ten years. With climate change, the project area is expected to experience more frequent, prolonged droughts, interspersed by severe wet years. Until recently, the Project location was categorized as an exceptional drought area (level 4) by the U.S. Drought Monitor as California experienced its third consecutive drought year. This drought was ended by a severe, unprecedented wet year that had catastrophic effects and highlighted the severity of climate change in the region. Despite the wet year, regional groundwater availability and drought conditions remain a concern. As part of its coordinated efforts with the Poso Creek Integrated Regional Water Management (IRWM) Group (Group), North Kern has agreements with Central Valley Project (CVP) contractors to recharge and bank wet year surface water for later return during dry years via the Friant-Kern Canal (FKC). North Kern recognizes the need to improve recovery and return capacity so that water banked in their recharge facilities is available to partnering districts while simultaneously alleviating in-district return capacity constraints to meet in-district needs. This Project will enhance the Poso Creek Region's drought resiliency by making 1,999 -acre feet per year (AFY) of banked water available to Districts in the region during critically dry years. This Project is identified as "Return Capacity Improvements of Banked Water" in the *Poso Creek Drought Contingency Plan,* the District's Management Area Plan prepared in accordance with California's Sustainable Groundwater Management Act (SGMA) plan, and the *2019 Poso Creek IRWM Plan Update*.

Assuming a grant agreement date of October 31, 2024, the construction of the project is anticipated to begin in December 2025 and is expected to be completed within three years from the signing of the grant funding agreement. The proposed well and manifold pipeline is not on a federal facility, but the well is proposed to discharge into the FKC, which is a Reclamation facility. The District will consult the Reclamation to complete the required NEPA and an encroachment permit before starting any construction activity.

1.1.1 Background

Established in 1935, North Kern is a special district that supplies surface water from the Kern River and groundwater to agricultural producers. The following subsections provide context for the proposed Project by briefly describing District water supplies and uses, as well as its water delivery system.

1.1.2 District Service Area

According to North Kern's 2021 Agricultural Water Management Plan, the cropping pattern within North Kern's 60,000-acre water service area has significantly changed from row crops to permanent plantings over the past 25 years. Currently, about 75 percent of the District's approximately 47,000 irrigated acres are planted with permanent crops, which primarily consist of almonds, grapes, and pistachios.

1.1.3 Primary Water Supplies and Sources

The District's principal source of surface water is the Kern River, which has been diverted for the benefit of its landowners under a schedule of long-standing diversion rights since the 1950s. Historically, water supplies available to North Kern from the Kern River have ranged from less than 10,000 AFY to nearly 400,000 AFY. The 10-year average annual water supply to the District is approximately 190,000 AFY.

While Kern River is the District's principal source of surface water, other sources include the Poso Creek, which traverses the northern portion of the District and is a source of occasional recharge; recycled water; and CVP-Friant water diverted occasionally under temporary "Section 215" contracts with Reclamation. Environmental constraints have limited delivery of surface supplies for CVP "Section 215" water into the District. Coupled with the recent exceptional drought in California, this crisis has caused growers to meet shortfalls in surface supplies by pumping groundwater. As the volume water pumped in the Kern Subbasin often exceeds the volume replenishing the aquifers, several undesirable results including reduced groundwater storage, subsidence, and increased pumping lifts due to lower groundwater tables have an increased chance of occurrence.

1.1.4 Water Delivery System and Water Use

Surface water is delivered to lands within North Kern through approximately 130 miles of unlined canals heading at two diversion points on the Kern River, 20 miles of pipeline, and 20 miles of lined canal. The District's principal supply artery, and most important upstream point of diversion on the Kern River, is the Beardsley-Lerdo system. This system is entirely gravity flow and consists of the diversion structure or headworks on the Kern River, 9.5 miles of concrete-lined canal (the Beardsley Canal) between the headworks and the District's southern boundary, followed by an unlined canal section (the Lerdo Canal) that continue along North Kern's eastern or "high" side. As much as 850 cubic feet per second (cfs) can been conveyed and delivered to the District through the Beardsley Canal. The second point of diversion, 4.5 miles downstream, is the Calloway headworks that services the relatively large cross section of the Calloway Canal. With a capacity

of about 1,000 cfs at its headworks, this conveyance facility is also gravity flow and extends for 10.4 miles before entering North Kern at 7th Standard Road.

Typically, District-owned wells are used only during "dry" years when surface water supplies are inadequate. Groundwater is delivered to customers during dry years via a network of small, lined canals running parallel to the larger, unlined canals used for conveyance of surface water. The District owns and operates about 100 wells. Approximately 200 privately owned wells in the Class 2 service area are used to meet irrigation demands in this part of the District.

The District's primary water use is for agricultural irrigation to approximately 47,000 irrigated acres. As a result of the District's highly variable water supply discussed in Section 1.2.2, North Kern has developed an extensive groundwater recharge and recovery program utilizing available groundwater storage capacity to regulate significant wet-year water supplies to years of deficit surface water supplies. This is accomplished through recharge in 1,500 acres of spreading ponds and recovery through about 100 District-owned deep wells.

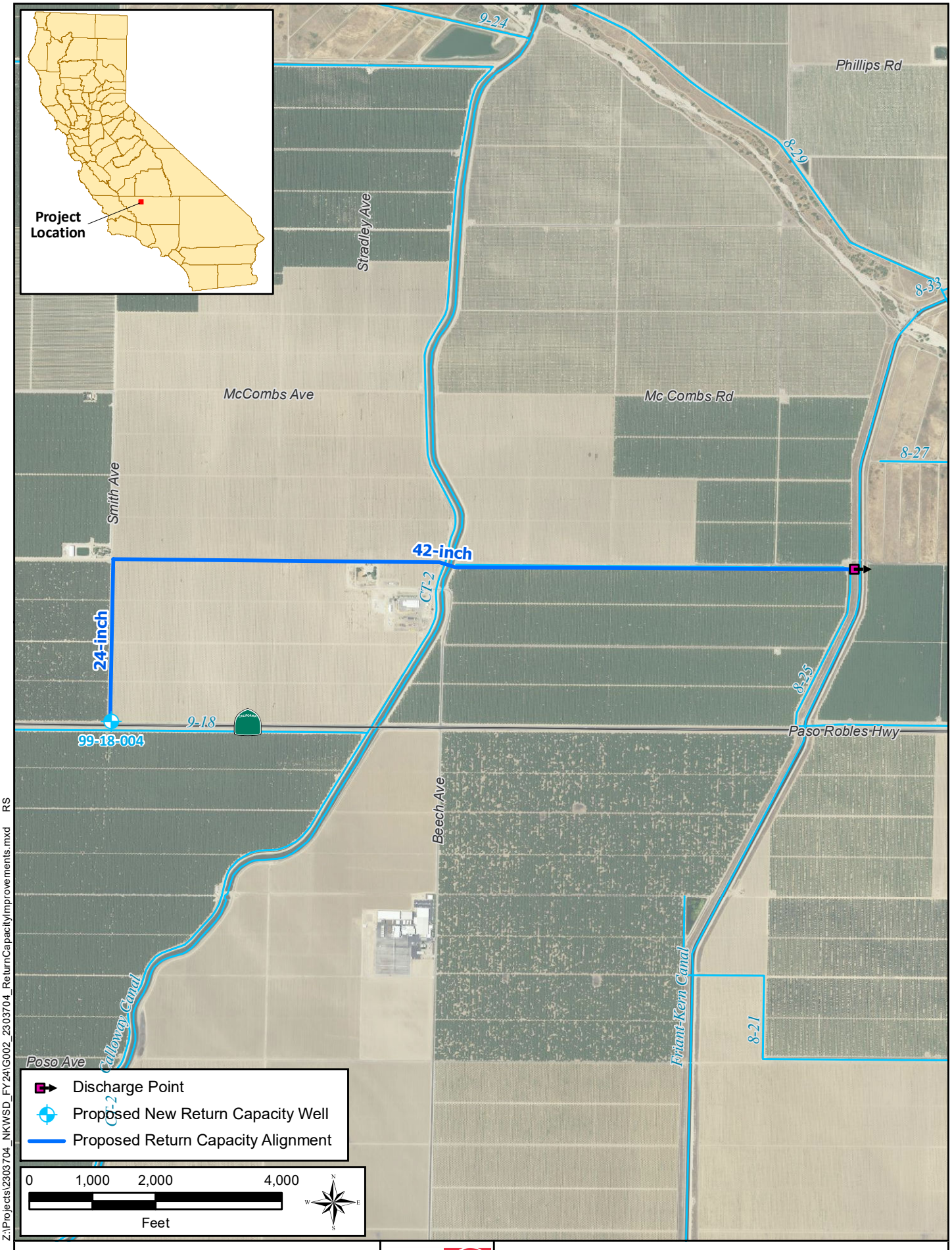
North Kern has operated this highly successful conjunctive management program for over 60 years. This program seeks to provide itself and neighboring Poso Creek IRWM districts supply reliability during dry or drought periods. When surplus CVP surface water supplies are made available to its Poso Creek IRWM partners, the District dedicates a portion of its recharge facilities for direct groundwater recharge through their spreading grounds. Return is accomplished via the FKC, which runs directly through North Kern and has turnouts at various locations. This system makes it operationally viable for North Kern to receive delivery of water from the FKC on behalf of other CVP contractors during wet years for recharge in their highly accessible spreading ponds. In this regard, North Kern makes use of approximately 300,000 AFY in spreading ground capacity for direct recharge of CVP water, of this banked supply, North Kern is estimated to receive a portion between 25 to 50 percent of the net supply augmenting the basin in the form of a storage 'leave behind' (based on agreement between districts). The dedicated return wells will enable the successful return of the stored water to its CVP water banking partners.

1.2 Project Location

The Project is located in the District's service area near the City of Bakersfield in Kern County, California. The well will be constructed at 35°36'7.84"N, 119°16'36.01"W and will be connected to the FKC via a pipeline starting at the well location and commencing at the 35°36'31.85"N, 119°14'13.69"W. Figure 1 shows the location of the project and its components. As previously stated, the region is highly drought prone and relies on surface water to sustain groundwater levels required to meet the demands of all beneficial users including agricultural, industrial, and municipal. The proposed Project provides means for the region to continue to bank and recover supplies critical for drought resiliency and supply reliability during dry or drought years.

1.3 Project Description

Project construction will include drilling and equipping one well with 6 cfs capacity and connecting it to the FKC for return of banked water via manifold piping, a system in which smaller



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31-Oct-2023

Drought Resiliency Project Grant Application
Kern County, CA

North Kern Water Storage District

GEI Consultants

RETURN CAPACITY IMPROVEMENTS

NOVEMBER 2023

FIGURE 1

pipelines are connected to a larger pipeline. As highlighted in Figure 1, 1,570 linear-feet (LF) of 24-inch, C900 DR 25 PVC lateral pipeline will be constructed from the well and connected to 11,800 LF of 42-inch, C900 DR 25 PVC mainline that will be constructed and connected to the FKC to convey and return previously stored to downstream banking partners. While the mainline pipeline is sized beyond the need of the proposed well, it provides capacity for planned expansion of the recovery network, which is needed in the future.

Project implementation alleviates the need for direct pipeline connections between the District and each partner reliant on North Kern for return of banked water. Return is achieved by expanding the network of wells and pipelines that are connected to the canal system, thus greatly increasing operational flexibility and reliability in the region during drought times. This Project ensures neighboring districts will continue to deliver wet period water to North Kern and enable better water management in the Subbasin, increases supply reliability, and adds to drought resiliency. Improvements to the recovery and return conveyance of the system improves the mechanism to return water to the CVP contractors from North Kern.

1.4 Performance Measures

Pumped water delivered from the well will be measured at the output point using a propeller flowmeter. This meter is equipped with a totalizer, a flow accumulation measurement device that will be routinely checked for measurement accuracy as part the District's maintenance program. When properly calibrated, meters with totalizers provide an accurate method of measuring flow rate and water volume delivered from the well through the pipeline, and into the canal. As part of the banking agreements with the partner districts, North Kern will retain 25 to 50 percent of the water, which augments groundwater levels. By measuring the volume of water input to North Kern and the volume of return to banking partners, the total amount of water supply made available to the districts will be determined to be the benefit. The volume of water retained by North Kern and its banking partners will be reflected on the reduced annual groundwater pumping rates.

1.5 Evaluation Criteria

1.5.1 Evaluation Criterion A – Project Benefits

Sub-Criterion A1.b. Water Better Managed

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

Project implementation enhances long-term drought resiliency by building return and conveyance capacity for previously stored wet year water to downstream banking partners. The region is heavily reliant on groundwater and benefits from capturing wet year water for later return during dry or drought years. Recharging water helps maintain groundwater levels and provides a reliable water supply during drought periods when surface water is limited. Being able to return banked water is key to the success of this conjunctive use practice. North Kern's extensive recharge area and direct conveyance connection from the FKC to deliver CVP supplies makes it a favorable and

sustainable location for neighboring districts with limited recharge capabilities to bank their CVP contract water supplies. CVP contractors also often have a right to surplus CVP flows in addition to their CVP Class 1 and Class 2 supplies, which in wet years need absorptive capacity outside of their own district to increase the reliability of their supply. As the demand for banking and return increases, North Kern experiences constraints on existing facilities to return the banked (previously stored) water back to the neighboring districts during dry years when banked supply is most needed. Improving the recovery and return capacity will reduce the constraints on returning stored water to their neighboring districts, which enables the CVP contractors' additional opportunities to capitalize on wet period storage of CVP supplies. For the purposes of this application, the 'life' of the project is estimated as 30-years for pump, control mechanisms, and outlet pipe operational life.

How will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing? If so, how will the project increase efficiency or operational flexibility?

The region is heavily reliant on groundwater and strives to capture as much wet year water as possible for later recovery and return in dry years. Building the infrastructure to return recharged wet year water is key to managing groundwater sustainability in drought or dry years. Without return capacity, the District is limited on the amount of water it can recharge and store. Drilling and equipping the well for recovery and return via the FKC is expected to increase the operational flexibility of the District to meet both in-District and neighboring district's critically dry year needs by providing more reliable return of previously banked supplies. Increasing the District's operational flexibility improves water supply management for the District's groundwater management and conjunctive use program; specifically, the recovery and return elements of the program while still fulfilling in-District landowner needs.

What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.

The daily flow of 6 cfs yields a volume of 11.9 acre-feet per day (AFD) or approximately 357 AF/month (11.9 AFD * 30 days), of which 118 AF/month would be reserved for in-District use to meet in-District demand during a critically dry year. When used over an eight-month period in a critically dry period, the total capacity translates to approximately 1,999 AFY (357 AF/month * 8 months * 7 out of 10 years) of water better managed for CVP contractors and North Kern in-district use. According to District operation and return records, dry years occur approximately 7 out of 10 years. At this rate, the 10-year benefit would equate to 19,990 AF (1,999 AFY * 10 years) of water better managed through return to CVP contractors and in-district use.

What percentage of the total water supply does the water better managed represent? How was this estimate calculated?

The total return capacity benefit is approximately 1,999 AFY. From 2016 to 2022, the District returned an average of 14,300 AFY of banked water. This period is representative of average

operations. Thus, the total water better managed benefit is approximately 14 percent (1,999 AFY / 14,300 AFY of groundwater usage for return) of the Districts total groundwater usage.

Provide a qualitative description of the degree/significance of anticipated water management benefits.

Drought resiliency is heavily reliant on the effective management of conjunctive use in the region. The District's continued objective is to build capacity for both recharge and return of banked water. Currently, the recharge capacity within the District is 300,000 AFY, which is sufficient to meet the needs of the District and its banking partners. However, a critical component of successful conjunctive use is the ability to return banked water. This is achieved through the drilling and connecting of wells to existing conveyance structures that enable the District to return water for both in-district and use within the Poso Creek IRWM districts. By constructing a new return well and connecting it to the FKC, North Kern will be able to increase the quantity of water banked as the Project will increase return capacity during dry years when surface water is largely unavailable, and growers are reliant on groundwater pumping. Not only will this project provide supply reliability, but it will reduce groundwater pumping in areas where recharge is not available by providing in-lieu surface water supplies through return of banked water. In turn, this will keep groundwater levels in those areas elevated. Additionally, groundwater levels within North Kern's district will also be augmented through leave behind of approximately 25 to 50 percent of banked supplies as outlined in individual banking agreements with neighboring water districts. Without Project implementation, North Kern would lack the capacity to return banked water. This would create a ripple effect in the conjunctive use program where constraints on return will limit the amount of water banked within the district.

As droughts become more frequent, it is crucial that conjunctive use capacities are increased. The Project will add return capacity for the District and neighboring districts. Water district managers within the Poso Creek IRWM Group will benefit from greater water supply return in times of drought or shortage. Increased return capacity will allow for greater flexibility in meeting the in-district needs of landowners and at the same time the ability for the District to meet the economically viable needs of neighboring districts by returning previously stored water.

Will the project make new information available to water managers? If so, what is that information and how will it improve water management?

Project implementation provides additional information on system conveyance and constraints that allow managers to better plan for future projects. As demand for conjunctive use management increases, this Project will likely be replicated by districts in other parts of the region to increase drought resiliency. North Kern has taken a lead role in the banking and return of wet year water for use in critically dry years. They have successfully managed this program for over 60 years, providing a model for other districts to follow to increase drought resiliency. Not only will it provide physical benefits by returning water to groundwater dependent areas in the region, but it will also provide information for districts to successfully implement their own conjunctive use programs. Additionally, data collected pertaining to extraction volume will be made available to water managers and will be used to better manage the water resources coming into their district.

Wells

What is the estimated capacity of the new well(s), and how was the estimate calculated? How much water do you plan to extract through the well(s), and how does this fit within and comply state or local laws, ordinances, or other groundwater governance structures applicable to the area?

The estimated capacity of the new well is 6 cfs, which is based off the average expected flow rate of the well. North Kern has implemented several similar wells, each with similar capacity. The well flow capacity will be accurately calculated over time by the District's ongoing efforts to install flow meters on each of the District owned wells. The well will be used to provide the District and its neighboring districts with 1,999 AFY of supplemental supply by returning banked supply when there is a lack of surface water during dry years and drought conditions. This amount is equivalent to the previously calculated total water better managed benefit. This water management program utilizes excess and available surface water supplies for recharge during wet years, effectively recharging the aquifer underlying the District. Water supplies previously recharged by neighboring districts and the District are then pumped out of the ground during dry years and drought conditions during a time where surface water deliveries are lower than normal allocations.

This Project has been identified in the District's Management Area Plan developed under SGMA, which seeks to achieve groundwater sustainability by 2040. Under this program, the District is adhering to a water budget which provides a sustainable yield to minimize groundwater overdraft. This Project has been factored into their groundwater planning efforts and seeks to offset over pumping of the aquifer through the return of banked water, thus promoting groundwater sustainability. This Program is overseen by the Groundwater Sustainability Agencies (GSAs) in the Kern Subbasin, which require all new wells to submit an Overdrafted Basin Supplemental Well Application to the Kern County Environmental Health Division along with their well drilling permit application and be approved by the local GSA. As discussed in Section 1.6.5, the awarded construction contractor will submit an Overdrafted Basin Supplemental Well Application and obtain a drilling permit from Kern County Environmental Health Division for approval prior to construction.

Does the applicant participate in an active recharge program contributing to contributing to groundwater sustainability?

Yes, the District has been actively recharging wet year water to stabilize the groundwater levels within the District's area and the subbasin as a whole. Additionally, the District has been banking recharge water on behalf of its neighbors to increase regional cooperation and promoting drought resiliency. This is possible through the developed Poso Creek IRWM Group Banking, Transfer, and Exchange Agreement Environmental Assessment (EA 09-121), which enables the District to be able to partner with their neighbors for recharge and return activities.

Provide information documenting that proposed well(s) will not adversely impact the aquifer it/they are pumping from (overdraft or land subsidence). At a minimum, this should include aquifer description, information on existing or planned aquifer recharge facilities, a map of the well location and other nearby surface water supplies, and physical descriptions of the proposed well(s) (depth, diameter, casing description, etc.). If available, information should be provided on nearby wells (sizes, capacities, yields, etc.), aquifer test results, and if the area is currently experiencing aquifer overdraft or land subsidence.

The proposed Project is designed to better manage return of banked water supply in North Kern's underlying groundwater basin during dry years. As calculated earlier, the well will be used to return 9 percent of banked water, which was recharged during wet years. This Project will not adversely impact the aquifer since it is a water management program designed to only return water that is has been previously stored through groundwater recharge. If water is not brought into the basin and recharged for later return, groundwater overdraft would likely occur. However, by utilizing previously banked water, groundwater levels will be better maintained.

The District anticipates that the environmental analysis is expected to be minimal as the District will confer with Reclamation for the required level of environmental analysis under NEPA. The environmental analyses and documentation will contain information regarding well impacts on the aquifer, and their potential frequent use. According to a third CAWSC study (Proceedings of the Eighth International Symposium on Land Subsidence, 2010), Kern County may experience an extreme amount of land subsidence due to the increased demand on groundwater. However, this project relies on returning previously banked water, as such, not impact is expected on groundwater levels or subsidence. Subsidence Monitoring Points provides adequate details of subsidence at various points across the District.

On average, depth to groundwater in the District has been approximately 200 feet at the end of a "wet" period and approximately 270 feet at the end of a "dry" period. Over the last 20 years, average annual spring water levels have fluctuated approximately 50 feet. Seasonal fluctuations can be significant and are a function of the amount of groundwater pumping in a given year and the location within the District. In general, seasonal fluctuations are greatest in the northern portion of the District and are less pronounced in the south.

Figure 1 provides the location of the proposed well and pipeline for this Project. Table 1 provides the sizes, capacities, and other pertinent details of the wells near the location of the proposed well. The proposed well will have a 6 cfs capacity and will be designed and constructed similar to the nearby existing wells.

Table 1. Details of Nearby Wells

Well No.	Casing Size (Inches)	Depth (ft)	Blank Casing (ft)	Perforation (ft)	Average Flow (cfs)
99-00-106	16	800	342	458	6
99-00-102	16	800	342	458	6
88-25-031	18	1,050	457	593	7
99-00-096	16	800	342	458	6

Describe the groundwater monitoring plan that will be undertaken and the associated monitoring triggers for mitigation actions. Describe how the mitigation actions will respond to or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping.

The District has developed a monitoring network in compliance with SGMA that will be utilized to monitor water levels within the District. This effort was started before SGMA and adapted to comply with its regulations. Long-term water-level data in selected wells representing the unconfined to semi-confined aquifers are used to evaluate groundwater movement, storage conditions, and pumping costs. Water levels are measured biannually in the "spring" and "fall", with timing of these measurements intended to coincide with the annual water level high and low, respectively. These data are made available to various regulatory programs and the California Department of Water Resources (DWR) for SGMA purposes. Additionally, the proposed well will be equipped with a well telemetry and a Supervisory Control and Data Acquisition (SCADA) system, for real-time measurement of water levels. This data will enable the District to monitor water levels instantaneously.

Sub-Criterion A2.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?

Historically, California has experienced severe drought periods interspersed by severe wet periods. As previously discussed, wet years in the region are experienced an average of 4 out of every 10 years. Conjunctive use programs seek to mitigate flood hazards by diverting wet year floodwater for recharge for later return during dry years when surface water is largely unavailable. The key element to the success of conjunctive use management is the ability to return wet year floodwater. Without return capacity, banking of wet year water is limited. In 2023, California experienced a severe and unexpected wet year. In response, California's Governor issued multiple executive orders (EOs) including EO N-4-23 and N-7-23, which provided emergency actions for diverting water for groundwater recharge to mitigate floodwaters. These orders were followed by legislation that codified emergency actions, providing direct support for flood diversions for groundwater recharge; thus, providing support for conjunctive use management practices. By providing the means to return water, Project implementation allows North Kern to expand its banking activities to capture additional wet year floodwater for groundwater recharge since they will have additional capacity to extract that water for use during dry years.

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

Conjunctive use management plays a vital role in improving community climate resilience. With prolonged drought periods occurring more frequently, it is crucial to capture as much wet-year water as possible to use as supply during drought years. Constructing extraction wells to return banked wet year water is sustainable management to improve community climate resilience. The

Kern Subbasin is a shared aquifer, with multiple users who rely on sustainable groundwater management including communities that rely on groundwater as their sole source of drinking water. Water brought in by the District or its banking partners and recharged within the District benefits all extractors in the Kern Subbasin. However, successful water recharge may only occur if return capacity is available. Therefore, Project implementation seeks to improve climate resilience by supporting the overall success of conjunctive use management.

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?

Project implementation serves to protect water supplies for the region and its associated uses. The region is largely dependent on agriculture for economic stability and development. Agricultural decline has been directly correlated to drought, leading to job loss and increased costs to consumers. The most recent drought period led to a $1.7 billion loss in revenue and an estimated 12,000 agricultural jobs were lost[1]. Water supply reliability is key to combatting drought impacts. North Kern's efforts to promote successful conjunctive use management through Project implementation seeks to mitigate drought impacts by providing return capacity for wet year banked water, which is used for supply reliability during drought years.

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?

By providing flexibility to deliver supplies to districts throughout the region, this Projects helps to offset reliance on other, environmentally sensitive supply sources. Note, CVP "Section 215" water supplies are only released as floodwater after all environmental and contract supplies (Class 1 or 2) have been met at the time of release. Any measure which provides means to captures floodwater and enables later delivery of banked surface water directly to water users improves the efficiency of water management in the entire region, reduces demand on the California Delta, a critical habitat for endangered species, and supports the environmental objectives of the California Bay-Delta Conservation Plan and the San Joaquin River Restoration Program. Regarding the Delta, relevant species include the Delta Smelt (federally endangered), Longfin Smelt, and Chinook Salmon (federally threatened). Increasing regional drought resiliency through Project implementation will result in decreased reliance of surface water from the Delta during a critically dry year.

Sub-Criterion A2.c. Other Benefits

Will the project benefit multiple sectors and/or users?

The District's conjunctive use program is not only of benefit to the Poso Creek IRWM Region but to the entire Kern Subbasin. The Kern Subbasin is a shared aquifer that provides benefit to multiple

[1] Los Angeles Times. "It's a Disaster. Drought Dramatically Shrinking California Farmland, Costing $1.7 Billion". November 23, 2022.

users and sectors including agricultural, industrial, and municipal. Any water better managed, directly benefits users of the shared aquifer who rely on groundwater to support industry (agricultural and other) and drinking water. By building additional return capacity, North Kern is providing the means to better manage incoming wet year surface water in the basin. Storing wet year water is critical for drought resiliency during dry or drought years when surface water is scarce, and it is critical to maintain groundwater levels. Water is often returned to areas where there is little to no recharge capacity or areas where users are groundwater depending. By drawing and returning water from a stable part of the aquifer to groundwater dependent areas, drought impacts can be mitigated.

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

Project implementation will benefit California's SGMA, a larger statewide initiative focused on achieving groundwater sustainability by 2040. The District is currently implementing a management area plan under SGMA, which has identified various projects and management actions to achieve groundwater sustainability including the proposed Project. SGMA has highlighted California's groundwater management crisis and the frequent tension over water resources in critically overdrafted basins. Plans developed under SGMA seeks to mitigate the ongoing crisis and tensions with the goal of achieving long-term sustainable groundwater management. Expanding its conjunctive use program is part of North Kern's strategy to achieving groundwater sustainability under SGMA and Project implementation will help close that gap.

1.5.2 Evaluation Criterion B –Planning and Preparedness

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?

In collaboration with other members of the Poso Creek IRWM Group and USBR, North Kern developed the Poso Creek Drought Contingency Plan (DCP). The DCP aims to address drought by identifying and implementing strategies to 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 clear and transparent administrative framework and associated responsibilities.

The plan includes district-specific drought mitigation measures, which provide additional details on drought planning within each member agency's jurisdiction. It incorporates findings that ensure drought vulnerabilities, mitigation actions, and response actions are appropriately captured to build and implement strategies for the region. Coordination took place with member agencies and stakeholders to ensure their conditions, response strategies, and vulnerabilities were captured and incorporated. Relevant sections of the DCP are included as Appendix A.

North Kern has identified potential vulnerabilities including climate change and hydrologic variability as well as allocation shortages due to hydrologic variability or institutional constraints. To mitigate these impacts, North Kern proposes various projects and response actions, of which, includes the proposed Project. Ultimately, elements provided by North Kern were incorporated into the following core aspects of the DCP.

- Drought Monitoring – Drought monitoring relies on water supply and availability forecasting by various regulatory agencies outside of the region since droughts in the Poso Creek Region are the result of drought conditions in other regions of the state that affect the availability of imported water supplies.
- Vulnerability Assessment – The vulnerability assessment evaluates the risks and impacts of drought for all relevant sections in the DCP area. Specific vulnerabilities to North Kern include variable Kern River and CVP supplies.
- Mitigation Measures – Mitigation measures were developed through long-term, complementary drought planning efforts included the Poso Creek IRWM Plan and the SGMA groundwater sustainability plans. The Project is specifically called out as a high priority mitigation measure for North Kern under the DCP as "Return Capacity Improvements of Banked Water".
- Response Actions – Response Actions were developed to be implemented during specific stages of drought to reduce the severity of immediate impacts to drought.

The objectives of the drought plan, include enhancing the reliability and effectiveness of surface water supplies, improving regional water conveyance and recharge actions, improving the effectiveness of water delivery, implementing region-wide management actions, enhancing regional conjunctive water use, maintaining the quality of water supply, facilitating the implementation of regional opportunities and projects, and adapting to changes in water availability and service areas. In summary, the applicable plan contains drought-focused elements such as monitoring water availability, assessing risks, promoting mitigation efforts, prioritizing response actions, ensuring transparency and responsibility, and facilitating public engagement.

Describe how the drought plan includes consideration of climate change impacts to water resources or drought.

The plan considers climate change impacts to water resources by discussing specific climate change projections and acknowledges the potential impacts on surface water supplies, highlighting the increased reliance on groundwater to meet demands. To address the potential impacts of climate change on water resources, the plan focuses on generalized predicted effects on the region's climate, such as changes in the timing, volume, and nature of precipitation in watersheds that provide water supplies to the region. The DCP also builds off complementary planning efforts such as the 2019 IRWM Plan Update and SGMA plans. The expanded climate assessment includes climate conditions for 2030 and 2070, which highlight an anticipated decrease in both volume and dependability of the water supply sources such as the Kern River, CVP, and State Water Project (SWP), consequently leading to lower surface water deliveries to the region and an amplified reliance on groundwater resources. The DCP emphasized that historical data predicts an inevitable

reduction in primary water sources in the forthcoming years, due to climate change, which could potentially expose the region to drought vulnerabilities. This has become a reality in recent years where CVP and SWP surface allocations were reduced to 0 percent for most contractors in 2022 due to drought conditions.

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

The DCP was developed in 2021 and submitted to Reclamation in October 2022, the plan was adopted in February 2023. It is updated periodically, at least every 5 years, or on an as-needed basis.

Was the drought plan developed through a collaborative process? Describe the process used for interested stakeholders to provide input during the development of the plan.

The DCP was developed through a collaborative process, facilitated by the formation of a drought Task Force. This Task Force is comprised of members of the Poso Creek IRWM Group and various stakeholders, representing a diverse range of communities, organizations, and agencies. The Task Force played an active role in the development of the plan, which included review and approval of the required Work Plan and the Communication and Outreach (C&O) Plan prior to the development of the drought plan. The Task Force also collaborated with stakeholders, consultants, and subject matter experts to support the development of various aspects of the plan. The comprehensive composition of the Task Force highlights the collaborative planning process, incorporating input from stakeholders with interests in agricultural, municipal, disadvantaged communities, and environmental sectors.

Furthermore, the DCP aims to educate the public and engage diverse stakeholders, make stakeholder participation easy and accessible, and provide opportunity for public input and feedback. Throughout the development of the drought plan, several public workshops were held to present key components of the plan and gather input from the community. The workshops were open to the public, and input was taken into consideration when developing the required plan elements. Additionally, updates on the DCP development were given at each publicly held monthly Poso Creek IRWM meeting.

Describe how your proposed drought resiliency project is supported by an existing drought plan. Does the drought plan identify the proposed project as a potential mitigation or response action? How is the proposed project prioritized in the drought plan? Does the proposed project implement a goal or need identified in the drought plan? Is the supported goal or need prioritized within the plan?

This Project is an identified mitigation action, listed by name in the DCP as “Return Capacity Improvements of Banked Water”. The project is ranked as “high” priority level. The priority level is based on the purpose, current status, as well as its benefits to drought planning objectives. The project specifically aligns with several of the DCP’s specified objectives such as improving regional water conveyance, direct recharge, and in-lieu service actions; enhancing regional conjunctive water use; and improving regional water conveyance. Projects that directly support

the DCP objective are given higher priority for implementation by the Group. Objectives of the DCP are met by the Project by the increased return and conveyance capacity provided by the well and pipeline, which enhances the District's conjunctive use program, providing regional supply reliability and drought resiliency.

1.5.3 Evaluation Criterion C –Severity of Actual or Potential Drought or Water Scarcity Impacts to be addressed by the Project

Describe 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 which has recently suffered from drought or water scarcity? Please describe existing conditions, including when and the period of time that the area has experienced drought or water scarcity conditions. Include information to describe the frequency, duration, and severity of current or recent conditions.

California has experienced extensive drought and water scarcity conditions in recent years. The region suffered an intense drought between 2012 and 2016. This period saw a significant increase in the rate of groundwater depletion, which doubled compared to previous years. Groundwater storage in the San Joaquin Valley has been depleting at an average rate of 1.5 million acre-feet per year since 1962, and this rate doubled during the mentioned drought period.[2]

In Water Year 2021 (October 1, 2020, to September 30, 2021), California experienced extreme conditions of temperature and precipitation, leading to drought and water scarcity conditions. This water year followed another dry and warm year, Water Year 2020. Water Year 2020 was the fifth driest year in terms of statewide runoff, and Water Year 2021 ended up as the second driest.[3] This was followed by a Proclamation of a State of Emergency due to drought issued by California's Governor in April, May, and July of 2021, covering a total of 50 counties including Kern County where the District resides. The State of Emergency is still in effect today. This two-year dry period exemplifies the trend of climate change that California has been experiencing in the 21st century. Drought was recently ended in 2023 with a severe and unprecedented wet year that had catastrophic impacts to California communities, farming, and infrastructure. This swing between the prolonged drought and severe wet year is illustrated by Figure 2.

As shown in the U.S. Drought Monitor tool (Figure 2), Kern County went from being in an area experiencing "Exceptional Drought" in September 2022 to "Moderate Drought to "Abnormally Dry" and some areas with non-drought conditions ("None").

[2]Viers, Leroy Westerling, and Josué Medellín- Azuara. 2021. Regional Report for the San Joaquin Valley Region on Impacts of Climate Change. California Natural Resources Agency. Publication number: SUM-CCCA4-2021-003.
[3]California Department of Water Resources. September 2021. Water Year 2021: An Extreme Year

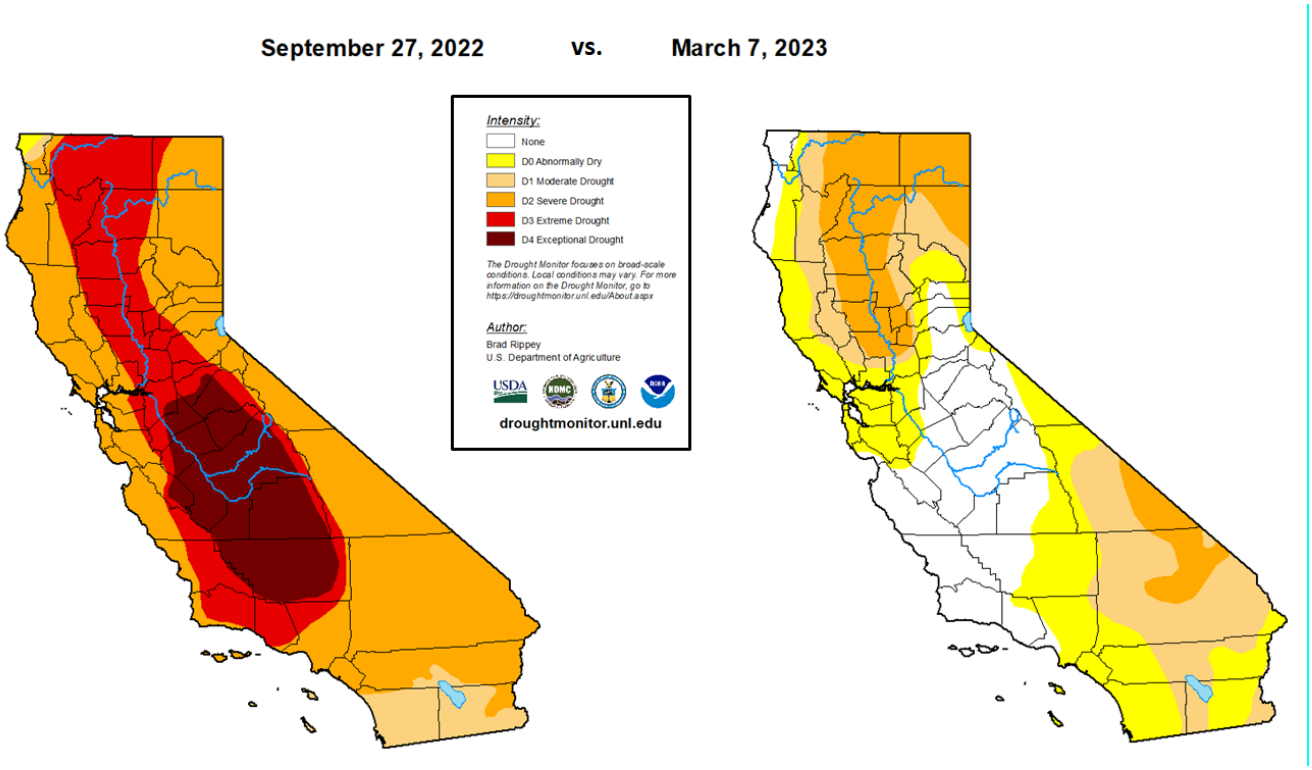

Figure 2. U.S. Drought Monitor Tool Map

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.

The ongoing or potential drought or water scarcity impacts if no action is taken include chronic lowering of groundwater levels, groundwater well dewatering, increased pumping lift, increased energy use and pumping costs, wear and tear on well pump motors, reduced well efficiency, and reduction of groundwater storage. These impacts can lead to increased maintenance costs, reduced well lifespan, and significant impacts to the beneficial use of groundwater for users over extended drought periods. Land subsidence, caused by over pumping of aquifers, can alter land surface, increase flood risk in low-lying areas, and damage infrastructure such as well casings, canals, and infrastructure. Land subsidence can lead to decreased agricultural productivity and increased production costs due to the need for alternative water sources. This can result in significant economic losses for farmers and the agricultural sector as a whole, affecting the state's overall food production and supply. Project implementation seeks to counteract these impacts by providing a system to replenish local groundwater levels and providing return and conveyance capacity needed to provide supply reliability and drought resiliency to neighboring banking partners during dry or drought periods.

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

Decreased groundwater levels have a significant impact on the water quality and water access of communities in the San Joaquin Valley. About 95 percent of drinking water in the San Joaquin Valley is supplied from groundwater.[4] However, intensive groundwater use and the effects of climate change have led to a decline in groundwater levels. The decrease in groundwater levels threatens the availability and reliability of drinking water for communities dependent on small water systems and private shallow wells located in rural unincorporated areas. During droughts, the water tables in these vulnerable communities are deepened, and the quality of the water is degraded. Wells can run dry, and excessive levels of nitrate and arsenic can be present in the remaining water sources. In the region where North Kern resides, communities are solely reliant on groundwater for their source of drinking water. They often do not have alternative or back up supplies due to lack technical, managerial, and financial capacity to support resilient drinking water systems.

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 (e.g., business, agriculture, reduced real estate values).

The decline in imported supply allocations, including the Central Valley Project (CVP), is closely linked to the reduction in groundwater levels, leading to an increase in fallowed land. This trend has significant economic implications for Kern County, especially for water-dependent industries like agriculture. Based on a 2022 Economic Impact Report commissioned by the California Department of Agriculture and conducted by UC Merced, the area of fallowed land in California expanded from 524,000 acres in 2021 to 695,000 acres in 2022. Notably, the rise in fallowed land primarily affected lower-value crop categories, including alfalfa, irrigated pasture, and grains. Consequently, the overall impact on gross revenue between the two periods totaled about $20 million.[5]

Whether there are other water-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict).

Increasing water scarcity, more rigorous water regulatory policies, and competing demands for water resources creates a potential for tensions and conflicts over water in the San Joaquin Valley, which could result in a water-related crisis or conflict. Increasing water supply through various methods such improving return and conveyance capacity can help replenish depleted aquifers and ensure a more sustainable and reliable water supply for agricultural and other water-dependent

[4]Pace, Clare, et al. "Inequities in drinking water quality among domestic well communities and community water systems, California, 2011–2019." American Journal of Public Health 112.1

[5] Medellín-Azuara, J., Escriva-Bou, A., Rodríguez-Flores, J. M., Cole, S. A., Abatzoglou, J. T., Viers, J. H., ... & Bernacchi, L. (2022). Economic Impacts of the 2020–22 Drought on California Agriculture.

activities. This can reduce the competition for water resources, lessening the tensions between different stakeholders, including farmers, municipalities, and environmental conservationists.

1.5.4 Evaluation Criterion D – Presidential and DOI Priorities

Describe how the proposed project will serve or benefit a disadvantaged or underserved community, identified using the tool described above.

According to the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, the majority of the area within North Kern's District is classified as disadvantaged. The area within the District is largely unincorporated rural areas, but does include part of the City of Shafter, a disadvantaged community (DAC). Additionally, several other DACs including the Cities of McFarland and Wasco are nearby and utilize the shared aquifer. All three of these communities rely solely on groundwater for drinking water. Projects that promote groundwater sustainability ensure that there is a reliable and consistent drinking water supply for these communities. The proposed Project entails a leave behind credit for North Kern, in which the District retains a portion of the water banked by its partners. This augments supplies and supports groundwater levels within the District and also decreases regional dependence on groundwater pumping beyond the annual stored amount. This directly benefits communities reliant on groundwater. When groundwater levels decrease, availability and reliability of drinking water is threatened. Lower groundwater levels in these vulnerable communities can lead to dry wells in areas where water is provided by small system and/or private shallow wells in rural unincorporated areas that do not have alternative water supplies.

These issues are highlighted by the California State Board's Safe and Affordable Funding for Equity and Resilience (SAFER) Program, which was developed to provide funding for short- and long-term solutions for communities in need of reliable and affordable drinking water. This Program followed the State's recognition that millions of Californians lacked access to safe, reliable, and affordable drinking water. The proposed Project supports the District's conjunctive use management program which supports the sustainable management of both groundwater and surface water supplies. In turn, additional wet year surface water can be captured to augment groundwater levels, which helps maintain supply reliability and affordability for communities by mitigating the drought impacts described above.

Additionally, promoting groundwater sustainability may also contribute to the long-term economic development and resilience of these communities. Many disadvantaged communities in the region rely on agriculture as a primary source of income and employment. The availability of sustainable groundwater sources supports agricultural activities, ensuring the viability of these communities' economic livelihoods. Moreover, by promoting increased return capacity, the reliance on groundwater alone can be reduced, providing a more resilient water supply, and reducing the vulnerability of these communities during periods of drought or other water stresses.

1.5.5 Evaluation Criterion E – Readiness to Proceed and Project Implementation

Describe the implementation plan of the proposed project.

The District is well positioned and prepared to implement the Project upon entering into a grant agreement. The District is in the process of implementing similar projects which will provide a foundation of experience that will allow for efficient and effective Project implementation. Further, the District has implemented several projects under grant agreements with Reclamation. This experience has prepared the District to efficiently navigate implementation and coordination with Reclamation at various steps of the process, including pre-award agreement development, NEPA, and reporting. The implementation plan can be broken down to a series of tasks that will be performed by consultants, engineers, and contractors. Tasks are aligned with services discussed in the Budget Narrative and presented in the schedule. Implementation, by tasks, is discussed further below.

1. **Grant Administration and Reporting**

   A consultant will be engaged to provide grant administration services, including but not limited to the following:

   - Preparation of interim and final progress and final reports
   - Agreement related cost tracking
   - Preparation of agreement amendments and schedule modifications, as needed
   - Review and advisement of agreement related regulations including procurement and contracting requirements such as *Build America, Buy America Act* related requirements; signage requirements; and labor requirements such as *Davis-Bacon Act* related requirements.

   Grant administration tasks will continue for the duration of the Project and grant agreement, including through agreement close-out and the final project and financial report.

   Significant Milestones:

   - Submittal of Interim Performance and Financial Reports
     - While reports will be submitted according to the schedule prescribed in the agreement, it is anticipated that reports will be due in April and October covering activity and expenses for the preceding six months.
   - Submittal of Final Performance and Financial Report
     - While the final reports will be submitted according to the schedule prescribed in the agreement, it is anticipated that the final reports will be due 90 days after the project is complete.

2. **Design**

   From a design and construction perspective, the Project will be approached as two components. The first being the well component and the second being the pipeline

component. Regarding well design, the District maintains existing, standard well design and specifications that will be used for the well construction in this Project. To that extent, the design of the well component is complete. Regarding pipeline design, an engineer will be contracted to design the pipeline component of the Project. It is anticipated major components of the design task will include geotechnical investigation, utility investigation, and surge analysis; preparation of 50%, 90%, and final design packages; and preparation of a cost estimate. Design will include a connection to an existing Friant-Kern Canal discharge; accordingly, as part of the design process, Reclamation will be engaged to review design that involves connecting to a Federal facility.

Design will also include preparation of front-end and technical specifications for the pipeline component that will be used during the bid process, which is further discussed in the next task. The engineer will prepare specifications that meet industry standards and grant agreement requirements, including front-end specifications that discuss bidding and construction contract requirements and technical specifications that describe the scope of construction and construction aspects in detail.

Significant Milestones:

- 50% pipeline design
- 90% pipeline design
- 90% specification package
- Final pipeline design
- Final specification package
- Reclamation review and approval of 100% design

3. **Construction Contracting**

As discussed above, the District maintains existing well design and specifications. The well drilling component of the Project will be advertised for bid using the District's well design and specifications. As discussed above, the engineer will prepare final design and specifications for the pipeline component. The pipeline construction will also be advertised for bid using the final design and specifications.

The construction contracts will be procured in accordance with applicable public contracting codes, the Code of Federal Regulations, and the District's purchasing policy. It is anticipated that the estimated amounts of the contracts will require a formal, competitive bid process. For both components, it is anticipated the bids will be advertised in a local newspaper and online planrooms for a duration of approximately 30 days. The engineer will conduct the bid process including coordination of advertisements and with planrooms, coordination with bidders, conducting a pre-bid meeting, responding to request for information, issuing addenda (as needed), conducting a bid opening meeting, evaluating bids, and assisting with contract award. It is anticipated that the construction contracts will be awarded to the lowest responsive and responsible qualified bidder.

Significant Milestones (for each contract):

- Advertisement of bid
- Pre-bid meeting
- Bid opening meeting
- Award of contract

4. **Environmental Documentation**

As the Project is located in California, and if awarded funding will have a Federal nexus, the Project is subject to the California Environmental Quality Act (CEQA) and, it is anticipated that the Project will be subject to the National Environmental Policy Act (NEPA). With regard to CEQA, a Notice of Intent was filed with the Kern County Clerk in August 2023. The Initial Study/Mitigated Negative Declaration (IS/MND) was available for public review for 30 days followed by adoption by the District's Board of Directors. In October 2023, a Notice of Determination was filed with the California State California State Clearinghouse and the Kern County Clerk. Accordingly, CEQA is complete. Pre-award costs are not requested.

The completed CEQA will be used to inform and/or supplement the NEPA process. If the Project is selected for funding, the District will engage a NEPA consultant; it is expected that the District and the consultant will work with Reclamation to determine the level of documentation required and on biological, cultural, and tribal consultation with respective agencies, as needed. North Kern acknowledges earth-disturbing activities must not commence until Reclamation provides a notice to proceed. As required, a qualified biologist will complete pre-construction surveys and conduct environmental and cultural worker awareness training; construction personnel will complete training prior to commencing ground-disturbing work, as needed.

Significant Milestones:

- Completion of surveys
- Commencement and completion of agency consultations (ex. with the State Historic Preservation Officer)
- Completion of documentation (ex. Categorical Exclusion Checklist)
- Receipt of Notice to Proceed from Reclamation

5. Permits and Approvals

The engineer and contractors will coordinate to obtain the required permits. Anticipated permits are discussed further below, per the Notice of Funding Opportunity's specific permit related questions.

Significant Milestones (for each contract, as required):

- Submittal of NPDES application
- Receipt of WDID number
- Submittal of Dust Control Plan
- Receipt of PM-10 permit

6. **Construction**

As previously discussed, construction contracts will be awarded to the lowest responsive and responsible qualified bidder. It is anticipated that two prime contractors will be awarded contracts; one for well drilling and one for pipeline construction. Construction will include drilling and equipping one 6 cfs capacity well, a 2,570 LF C900 DR 25 PVC

24-inch, and a 11,800 LF C900 DR 25 PVC lateral pipeline. The associated manifold piping will connect the well to the FKC where water will be discharged for return. Construction activities under well drilling contract include mobilization; demobilization; drilling and equipping (casing, electrical, motor, etc.); pump test; and installation of a flow meter. Construction activities for under the pipeline contract are anticipated to include mobilization; demobilization; environmental compliance; potholing; open cut road pavement crossing and repair; valves; furnish and installment of pipelines; and connection to the FKC. To the extent it is required under each contract, material will be procured in compliance with the *Build America, Buy America Act*. Labor will be obtained in compliance with applicable regulations such as the *Davis-Bacon Act* and prevailing wage, as required.

Significant Milestones (for each contract):

- Mobilization
- Material testing and sampling
- Connection to Friant-Kern Canal
- Start-up and system testing
- Demobilization

7. **Construction Management**

An experienced construction management consultant will be engaged to oversee construction of each component. Construction management tasks will include construction observation; coordination and conducting of construction progress meetings; reviewing and responding to submittals; reviewing and responding to requests for information; preparing change orders as needed; reviewing invoices and recommending payments to the District; project closeout coordination; and general coordination with the contractor and District.

Significant Milestones (for each contract):

- Pre-construction kick-off meeting
- Weekly progress meetings
- Project acceptance
- Retention payment release
- Notice of Completion filing

The following schedule is estimated based on planned implementation of the above-discussed tasks. The proposed schedule assumes a signed grant award by October 31, 2024 and will be completed within Reclamation's required three-year duration for Funding Group III.

Table 2. Schedule

Milestone/Task/Activity	Planned Start Date	Planned End Date
Grant Administration & Reporting	October 2024	October 2027
Design	October 2024	September 2025
Construction Contracting	October 2025	November 2025
Environmental Documentation	November 2024	November 2025
Permits and Approvals	June 2025	November 2025
Construction	December 2025	July 2027
Construction Management	December 2025	July 2027

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.

Environmental

As previously discussed above, CEQA has been completed. It is anticipated that approvals and documentation related to NEPA will be required, which will be informed by the completed CEQA. The NEPA process is anticipated to take approximately one year and will include coordination between North Kern's environmental consultant and Reclamation staff to determine the level of documentation required and for biological, cultural, and tribal consultations with respective agencies, as needed.

Well Drilling

Prior to construction, the contractor will submit an *Overdrafted Basin Supplemental Well Application* and obtain a drilling permit from Kern County Environmental Health Division for approval. This process is approximately three months and will commence shortly after a construction contract is awarded and will be completed prior to construction.

Construction

Construction is anticipated to occur on District property or exclusively located within maintained rights-of-way owned and operated by the District. If Project components need to be installed in a right-of-way belonging to someone other than the District, the engineer and contractor will coordinate to obtain an encroachment permit. Because the manifold pipeline will discharge into the FKC, the District anticipates consulting with Reclamation regarding an encroachment permit prior to connecting the conveyance pipeline to the FKC. Encroachment permit application processes typically include preparation and submittal of an application provided by the permitting agency and submittal of relevant drawings and plans. Permit application timelines vary; however, in the District's experience most processes take approximately six weeks on average. It is noted that the District is not subject to Kern County's building and grading permits.

A National Pollutant Discharge Elimination System (NPDES) Permit and Dust Control Plan or notification will be obtained by the contractor under construction contracts, as needed. The NPDES process will be completed by the contractors or their subcontractors and is expected to take four to six months. This process includes preparation of a Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices to prevent waste and pollutants from flowing to surface water and groundwater and will be reviewed by the California State Water Resources Control Board (State Board). Upon approval by the State Board, a Waste Discharge Identification (WDID) is expected to be issued. The NPDES process is expected to commence shortly after construction contracts are awarded and will be completed prior to construction.

For the Dust Control Plan, application or notification will be made by the contractor to the San Joaquin Valley Air Pollution Control Board for a PM-10 Dust Management Plan permit, which will require dust control management be implemented during construction to prevent air pollution. This process will take approximately three months and will commence shortly after a construction contract is awarded and will be completed prior to construction.

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

The District completed preliminary design of the pipeline to estimate the cost required for implementation and in support of the IS/MND. Additionally, the well design is completed to the extent that the District has a standard well design that will be utilized for this Project.

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

No land purchases are required for Project implementation.

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

The District does not anticipate the need for any policies or administrative actions to implement the Project. The District acknowledges that a resolution from the Board of Directors will be required if the Project is selected for funding. No other administrative actions are anticipated to be needed to implement the Project.

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 located in the Tulare Lake Basin, which also includes Reclamation's Friant-Kern Canal (FKC). Although North Kern is not a registered CVP contractor, it has a direct conveyance connection with CVP water supplies, it often receives delivery of surface water on behalf of neighboring districts with CVP contract water supplies, through turnouts located along the FKC, and typically retains a portion of the stored supply (25% to 50%). The CVP contractors often have a right to surplus CVP flows in addition to their CVP Class 1 and Class 2 supplies, which in wet years need to utilize banking facilities for groundwater recharge and storage to increase the reliability of their supply. The proposed project will add recovery and return capacity to return banked supply to the District and neighboring districts by establishing a connection to the Friant-Kern Canal. The proposed well to be drilled and manifold pipeline to connect the well is not on Reclamation project lands, but the well is proposed to discharge into the FKC, which is a Reclamation facility. However, the District will consult the Reclamation to complete the required NEPA and SF-299 encroachment permit before starting any construction activity.

North Kern will effectively utilize its absorptive capacity to recharge excess water during wet years on behalf of its Poso Creek IRWM group partners, bank the supply, and deliver back to them during the dry years when the demand for water is at its peak. This Project increases operational

flexibility, improves effective utilization of their surface water sources, and promotes regional co-operation in conjunctive water use, which is a crucial nexus to mitigate drought.

As part of a coordinated effort with Poso Creek members, North Kern is in agreements with Central Valley Project (CVP) contractors to recharge and bank wet period surface water. These CVP contractors include Shafter-Wasco Irrigation District (SWID), Southern San Joaquin Municipal Utility District (SSJMUD), Delano-Earlimart Irrigation District (DEID), and Kern Tulare Water District (KTWD).

1.5.7 Evaluation Criterion G – Stakeholder Support for Proposed Project

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?

A letter of support is provided by the Poso Creek IRWM Group. As previously discussed, stakeholders of the Poso Creek Group were involved in the development of the DCP and thus, the identification of mitigation actions to address immediate and future drought conditions. While the members of the Poso Creek IRWM Group are not providing project cost-share contributions, they are in full support of the project as it will promote regional supply reliability and drought resiliency. Additionally, several members of the Group rely on return of banked water from North Kern to use for irrigation during dry years when surface water is scarce. The letter of support is provided in Appendix B.

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?

This project is supported by a diverse set of stakeholders, which is exemplified by the letter of support provided by the Poso Creek IRWM Group. The Group is made up of various stakeholders including irrigation districts, a water conservation district, and several disadvantaged communities, all of which participated in the collaborative development of the DCP. Additionally, this project is also identified in the District's Management Area Plan developed under SGMA, which consisted of a robust outreach program that included the input of all beneficial users including agricultural, industrial, and municipal. These various complementary planning efforts illustrates the immense support for this Project and its goal of achieving groundwater sustainability and drought resiliency.

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 3.

Table 3. Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
1. North Kern Water Storage District	$4,109,000
Non-Federal Subtotal:	$4,109,000
Requested Reclamation Funding:	$4,000,000

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.

The extent of construction activities (footprint) for the Project is relatively small and located within property owned and operated by North Kern and the Friant-Kern Canal (SF-299 permit will be obtained in this regard). The Project's area of potential effect is located within a canal easement or is on agriculturally disturbed soil. At this time, the District is not aware of any part of this project that will have a significant impact on soil, air, water, or animal habitat quality.

The Project requires limited earth-disturbing activities. Excavation and installation of the pipeline are not extensive movements of quantities of material. The Contractor will be required to prepare PM-10 Dust Control Prevention Plan (which will include construction BMPs such as the use of water or dust suppressants) and obtain a PM-10 dust control permit from the San Joaquin Valley Air Pollution Control District prior to any earth-disturbing activities. The proposed Project would also generate criteria pollutants from the use of diesel-powered vehicles and equipment, and earthmoving activities; however, it is assumed that the proposed project falls below the SJVAPCD Small Project Analysis Level (SPAL) threshold based on the anticipated construction duration and equipment.

Based on a preliminary review of CDFW's California Natural Diversity Database and USFWS' Information for Planning and Conservation, it is assumed habitat for special-status plant and wildlife species is not present in the project area. Nevertheless, the District will engage a qualified biologist to conduct both a reconnaissance-level survey during the planning phase and a pre-construction survey shortly before the start of construction to ensure that the construction area remains unoccupied by special-status plant and wildlife species. In addition, standard avoidance and minimization measures will be included in the Project specifications and will be followed during construction. Moreover, the duration of the construction activity is expected be relatively short.

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?

Based on a preliminary review of aerial topography, CDFW's California Natural Diversity Database, and USFWS's Information for Planning and Conservation, it is assumed that Federally listed species are not present in the proposed project area. Moreover, based on the USFWS's Critical Habitat Mapper, the proposed project will not occur on designated critical habitat. A

qualified biologist will conduct a reconnaissance-level survey during the planning phase to identify potential impacts and provide avoidance and minimization measures, if any, to avoid or reduce those impacts.

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.

There are no wetlands or other surface waters inside the Project boundaries that fall under CWA jurisdiction as "waters of the United States".

When was the water delivery system constructed?

North Kern's canal and pipeline distribution system and related works were originally completed in the 1950s, with additional features and enlargements (e.g., pumping stations, discharge pipelines, and reservoir systems) constructed with the expansion of the District's service area (i.e., increased water demand). Kern County Land and Water Company, who subsequently lengthened its current 30-mile length, originally constructed the Calloway Canal between 1875 and 1877 by O.P. Calloway. Over time, the canal's prism (i.e., trapezoidal shape), head gates, weirs, and other features have been replaced, repaired, or improved to allow for greater capacity and flow delivery to water users (Districts). As of late, modifications have been made to accommodate commercial, housing, and road development as the City of Bakersfield has slowly been expanding to the north. It is worth noting that the proposed Project will not result in any modifications or effects to individual irrigation system features (e.g., headgates, canals, or flumes).

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.

There will be no modifications to the existing irrigation distribution system. Construction at the FKC would likely occur during the typical maintenance period, which is November through January, to minimize impacting water deliveries.

Are any buildings, structures, or features in the irrigation district 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.

North Kern encompasses approximately 60,000 acres and has not undertaken a District-wide inventory of properties listed or eligible for listing on the National Register of Historic Places; however, North Kern has conducted many inventory effort, including a records search at the South San Joaquin Valley Information Center, archival research, Native American consultation conducted by Reclamation, additional consultation with local historical societies, and

archaeological and built environment field surveys of several Area of Potential Effects (APE). To date, only one historic-era (i.e., 50 years old or older) built environment resource has been identified: the Calloway Canal (P-15-007233). In 1996, SHPO evaluated the canal for NRHP eligibility and determined it ineligible for listing.

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

Based on previous cultural resources record searches at the Southern San Joaquin Valley Historical Resources Information Center and the Native American Heritage Commission, no known archaeological sites occur in the proposed project area. As part of Section 106 process, a qualified archaeologist will conduct a pedestrian-level survey to confirm this understanding.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

Construction of the proposed project will support the important agricultural-based economy in the Southern San Joaquin Valley which will in turn support low income and minority people 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?

The proposed project will not limit access to or ceremonial use of Native American sacred sites or tribal lands.

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?

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species in the region. The District and its contractor will implement construction best management practices to ensure that the introduction or spread of noxious weeds or non-native species will not occur.

POSO CREEK IRWMP
Management Group

16294 Central Valley Hwy, Wasco, CA 93280
661-758-5153

Mr. Ram Venkatesan
Deputy General Manager
North Kern Water Storage District
33380 Cawelo Avenue
Bakersfield, CA 93308

Re: Letter of Support –Return Capacity Improvements

Dear Mr. Venkatesan,

On behalf of the Poso Creek Integrated Regional Water Management (IRWM) Planning Group, I would like to express support of North Kern Water Storage District's (NKWSD) efforts to improve return capacity from North Kern, which will help improve operational flexibility, efficiency, and drought preparedness in the region.

The Poso Creek IRWM Group is interested in and supportive of the *Return Capacity Improvements* project, as it will improve recovery and return capacity of their banking facilities to allow surface water recharged and stored in North Kern's groundwater basin to be available to the Poso Creek IRWM Group of districts.

This Project is an important improvement as it helps meet the need to enhance the Poso Creek Region's drought resiliency by connecting an additional recovery well to its existing network of recovery wells and return conveyance capacity. This Project will be of great benefit to both NKWSD and other districts within the Poso Creek IRWM Region. I hope that our expression of support is helpful in your efforts to secure grant funding assistance to implement this project. If the funding agency would like to discuss our interest and support of your project, I would be happy to do so.

Sincerely,

Isela Medina

Isela Medina
Treasurer, Poso Creek IRWM Group
imedina@semitropic.com
(661) 758-5113