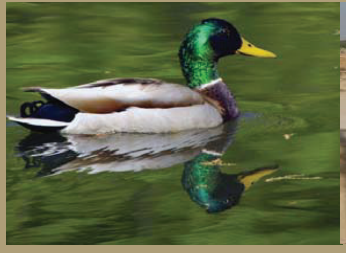

August 2020

WaterSMART Drought Response Program:
Drought Resiliency Projects for FY 2021

Funding Opportunity Announcement No. BOR-DO-20-F002

Conveyance Improvements for Farmers Cooperative Recharge


Project Location
Kern County, CA

Applicant
Shafter-Wasco Irrigation District
P.O. Box 1168
Wasco, CA 93280

SWID
Shafter-Wasco Irrigation District

WaterSMART Drought Response Program (FY 2020)

Funding Opportunity Announcement No. BOR-DO-20-F002

Shafter-Wasco Irrigation District
Conveyance Improvements for Farmers Cooperative Recharge

Project Location
Shafter-Wasco Irrigation District,
Wasco, Kern County, California

Applicant
Shafter-Wasco Irrigation District
16294 Central Valley Hwy
Wasco, CA 93280

Project Manager: Dana Munn
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August 5, 2020

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1. Technical Proposal

1.1 Executive Summary

Date	August 5, 2020
Project Name	Conveyance Improvements for Farmers Cooperative Recharge

Applicant Information	
Name	Dana Munn
Title	General Manager Shafter-Wasco Irrigation District
Telephone	(661) 758-5153
E-mail Address	dmunn@swid.org
City, County, State	Wasco, Kern County, California

The Shafter-Wasco Irrigation District (Shafter-Wasco, SWID, or District) proposes a cost-shared project with the U.S. Bureau of Reclamation (Reclamation, USBR). The *Conveyance Improvements for Farmers Cooperative Recharge* (Project) proposes drought resiliency for the District through construction of 1,600 linear feet (LF) of 24-inch pipeline that would allow increased conveyance capacity of surplus District water to a 32-acre recharge basin. The 32-acre in-district recharge basin is to be constructed separately from the Project through an agreement between High Speed Rail Authority and SWID and is expected to be completed by October 2020. When operational, the recharge site has the capacity to recharge 14.7 acre-feet per day (AFD); in contrast, existing District pipeline facilities that could be used to convey water to the site has a capacity of 12.3 AFD. The Project would upgrade the District's existing 15-inch lateral with the proposed 24-inch line in order to optimize recharge capacity of the Farmer Cooperative Recharge facility and allow the District to meet existing irrigation demand at the same time. The Project aims to increase the District's ability to take in water for groundwater recharge in surplus or wet years where supply is greater than demand, for improved drought resiliency in dry years when there is a shortage. Recovery of the banked water to meet district irrigation demand during a drought would be extracted through existing landowner wells near the recharge site. The Project expenses include construction of a new District turnout, construction of approximately 1,600 LF of 24-inch PVC pipe, and installation of a new 14-inch outlet to the spreading grounds. Total Project costs equate to $1,098,110. Of this total, $500,000 is requested as Federal funding. The Project is estimated to provide the following annual benefits, and projected 10-year benefit, in acre-feet (AF) and at a frequency of 4 wet years out of 10 years.

Table 1-1. Estimated Benefits

	Estimate Annual Benefits (AFY)	10-Year Benefits (AF)
Est. Additional Water to SWID	2,088	20,880
Est. Additional Water to Region	2,088	20,880
Total Additional Water Available	**2,088**	20,880

The Project is expected to be completed within two years of signing a grant agreement. Construction activities are expected to be performed within seven months and all Project activities

are expected to be completed by mid to late-2022. Time allotted for project activities are based on recent experience by engineering consultants in completing similar work.

1.2 Background Data

1.2.1 *Major Crops and Total Acres Served*

The location of the Shafter-Wasco Irrigation District is shown in Figure 1, in the north-central portion of Kern County in the Southern San Joaquin Valley of California. The District actively supplies a service area of approximately 39,000 acres, with approximately 30,000 acres as irrigated lands (approx. 77 percent of the District). The District lies between Interstate 5 to the west, State Highway 99 to the east, with the Cities of Wasco and Shafter both located within the district boundaries. Additionally, in 2019 the District added the 7th Standard Annex (Annex Area) to their service area. The Annex Area supplies about 10,000 acres just south of the District boundary, with approximately 8,000 acres as irrigated lands. At its greatest extent, the District's service area is approximately 10.5 miles wide (east-west) and 12 miles long (north-south).

1.2.2 *Primary Water Supplies and Sources*

The District's primary source of surface water is Central Valley Project (CVP) water delivered through two turnouts from the Friant-Kern Canal (FKC) connected to a north and a south mainline. The District was established as a public entity in 1937 and in 1955 entered a water contract with Reclamation to supply water for the district from the Friant unit of the CVP by way of the FKC. The District began importing CVP surface water in 1957 with a water service contract for 50,000 AF per year (AFY) of Class I water and 39,600 AFY of Class II water. The CVP water supplies are highly variable based on their Class 1 and Class 2 contracts and can range from 3,000 AF in a "critically dry" year to nearly 85,600 AF in a "wet" year. Average inflow from FKC Class 1 and Class 2 allocations is 55,700 AF from. Besides the CVP, the District supplements deliveries with transfers from neighboring Districts when water originating from other surface water sources is available or through conjunctive use of previously recharged water from the underlying groundwater basin.

In 2014, the Sustainable Groundwater Management Act (SGMA) was enacted to provide a framework for sustainable groundwater management in California. According to SGMA, government and water agencies of high and medium priority basins are required to maintain favorable conditions to balance groundwater levels through the management of pumping and recharge of groundwater resources. Under SGMA, the District submitted a management area plan under a joint powers agreement with the Kern Groundwater Authority in January 2020. Since then, the District has focused its efforts on implementing projects and management actions as outlined in their management area plan to achieve groundwater sustainability by 2040.

The District overlies a usable groundwater basin, the Kern County Subbasin of the Tulare Lake Basin, with an estimated 40 million acre-feet total capacity (DWR, 2004). According to the management area plan developed under SGMA, the District estimates a safe yield which ranges from 17,100 to 21,600 AFY. This is based on an assumed sustainable yield of 0.57 to 0.72 AF per acre for irrigated land, multiplied by SWID's 30,000 acres of irrigated lands. To comply with SGMA, the District is implementing projects and management actions to bring in more water to the region to achieve groundwater sustainability by 2040 as required by SGMA. The Farmers Cooperative Recharge Project is a part of this effort and is important to implement in order to

comply with SGMA. By building additional capacity to bring in surplus water, the Project makes additional surface water available to use in-lieu of groundwater pumping during dry years. Landowners in the District utilize production wells to extract underlying groundwater resources to meet on-farm water demands when surface water supplies are inadequate. For example, in 2011 SWID's total surface water supplies were 75,900 AF, but in 2014 supplies were 10,200 AF as reflected in the District's recent Management Area Plan developed under SGMA. Given the total District water demand averages 81,200 AF from the years 1993 to 2015, the remainder is pumped by landowners to meet their irrigation needs. The following table displays the changes in supply that occur from a wet year (2011) to drought conditions as seen in the years 2013 to 2015:

District Water Budget Summary (AF)

Water Accounting	2011	2013	2014	2015
Water Uses/Demands[1]	69,000	93,700	81,100	76,200
Surface Water Supply[2]	75,900	32,300	10,200	3,000
Groundwater Pumping[3]	N/A	61,400	70,900	73,200

[1]Water demand estimate based on Evapotranspiration data from the Irrigation Training and Research Center (ITRC) and from Land IQ land use data. See Table 2-13 of Management Area Plan.
[2]Surface water supply (primarily from the CVP) substantially decreases in drought years. See Table 2-18 of Management Area Plan. (http://www.kerngwa.com/assets/north-kern-water-storage-district---shafter-wasco-irrigation-district-management-area-plan_draft.pdf)
[3]Pumping values represent the difference between estimated water use and the measured surface water supplies.

Water Delivery System: Water is conveyed from the FKC to the District's service area through a network of approximately 120 miles of pressurized pipelines and 3/4 mile of lined canals. Surface water is delivered through two CVP turnouts into two separate systems (North and South) comprised of 120 miles of pressurized pipelines. The District monitors the inflow into the system from the two locations on the FKC using Venturi Meters. In 2017, the District completed construction of their first recharge facility, the Kimberlina Spreading Grounds, to facilitate District banking operations and is currently adding additional recharge sites within the District. Figure 2 illustrates the components of the banking process. Spreading grounds within the District receive surface water supplies delivered through the North and South conveyance systems that were sized for irrigation delivery. This Project is to modify the conveyance capacity to one of the District's new recharge sites. Existing grower owned wells will be utilized as the return mechanism to extract and previously stored water for beneficial use in years when surface water deliveries are inadequate to meet demand.

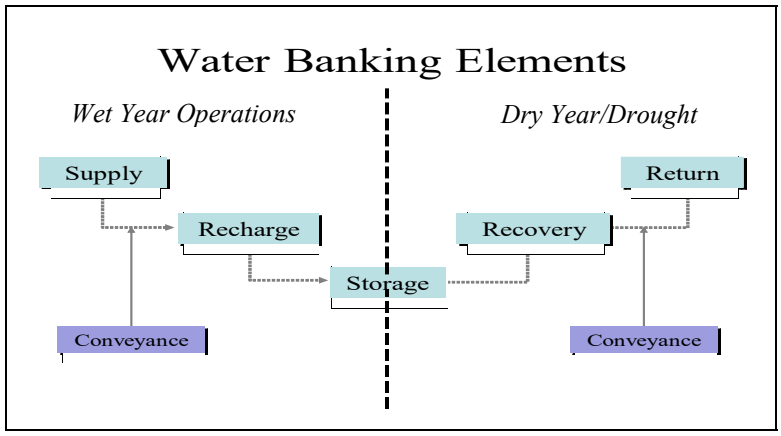


Figure 2: Water Banking Process followed by the District

1.2.3 *Water Use*

As a district, Shafter-Wasco provides water deliveries exclusively for irrigated agriculture. In this regard, the District serves water to about 250 water users. However, there are two cities, Shafter and Wasco, located within the District's boundaries which pump groundwater for domestic and industrial needs and have a combined population of more than 40,000 people.

The District has been essentially fully developed to irrigate agriculture for many years, with about 30,000 irrigated acres out of the approximate District total of 39,000 acres. The principal annual crops are cotton and alfalfa, while the principal permanent crops are almonds and grapes, with the latter accounting for a little more than one-half of the irrigated acreage. The Annex Area also utilizes about 8,000 irrigated acres of the approximate Annex total of 10,000 acres. The primary land use includes permanent crops, row and field crops.

There are no apparent long-term trends toward increasing or decreasing irrigated acreage; accordingly, the applied water demand is not expected to change significantly in the future.

1.2.4 *Regional Climate*

The District is surrounded by the Sierra Nevada Mountains to the east, the Tehachapi to the South, and the Temblor Range to the West. The various mountain ranges keep the District in the moderate weather conditions California is known for, with an average temperature ranging from 45°F in the winter to 82°F in the summer. The Sierra Nevada serve to shut out the more extreme cold weather front in the winter, while also accumulating snowpack that later provides surface water runoff to the region during the dry summers. The Kern River flows from the Sierra Nevada mountains, to the southwest, thence north, to its terminus at the Tulare Lakebed. Annual precipitation ranges from five to seven inches, and usually occurs over a short four period, from November to March.

1.2.5 *Prior Working Relationships with USBR*

- (2006/2007) – Shafter-Wasco implemented a system improvement project, which involved the replacement of more than 20 farm turnouts at a total cost of about $253,000, with $25,000 of funding provided by Reclamation under the Water Conservation Field Service Program.

- (2009/2010) – Shafter-Wasco implemented the North Intertie, a bi-directional connection between SWID's North Mainline and the Calloway Canal for $300,000 of a $650,000 project. The North Intertie is located on the east side of the Calloway Canal, north of Kimberlina Avenue, and northeast of the Kimberlina Spreading Grounds
- (2013-2017) – Shafter-Wasco implemented several modifications to the 2013 Madera Avenue Intertie project that concluded with the construction of the Kimberlina Spreading Grounds in 2017. The District had received notice of an award of $5,000,000 through the San Joaquin River Restoration Program towards the $11,589,795 project in 2013, however, due to lack of Grower acceptance for the Intertie, modifications were allowed by Reclamation to construct the spreading grounds.
- (2017) – In July 2017, the Semitropic WSD was notified of a grant award for the CALFED Water Use Efficiency Grant, administered by Reclamation in support of the Bay-Delta Restoration Program. The project was for the construction of Semitropic WSD and Shafter-Wasco ID Groundwater Recharge Intertie (Diltz Intertie). Shafter-Wasco is a Partnered with Semitropic WSD to complete the Intertie which is scheduled to be completed in 2020.
- (2017) – Drought Continency Plan funding was awarded through Shafter-Wasco for the Poso Creek IRWM Plan, Regional Water Management Group. A grant agreement was finalized in 2018.
- (2019) – In Sept 2019, a grant agreement was signed for the CALFed Water Use and Efficiency Grant - Leonard Avenue Conveyance Improvement Project, administered by Reclamation in support of the Bay-Delta Restoration Program. The Leonard Ave Conveyance Improvement Project is an intertie pipeline that will bring surplus CVP water to SWID's neighboring banking partner Semitropic Water Storage District (SWSD).
- (2019) – In 2020, SWID was notified of a grant award for the CALFed Water Use and Efficiency Grant – Bell Recharge Pipeline, administered by Reclamation in support of the Bay-Delta Restoration Program.

1.3 Project Location

The Conveyance Improvements for Farmers Cooperative Recharge is located in Kern County, California, approximately 1.0 mile from the heart of the City of Shafter. The Project latitude and longitude is (35.485328, -119.266255). The Project would connect to the existing 36-inch District mainline at the intersection of Highway 43 and Riverside Street before traveling westerly for approximately 0.3 miles (1,600 LF) to the 32-acre recharge site shown in Figure 3. The Project is in the southern portion of SWID. The recharge site is to be used for the direct recharge of surface water supplies into the underlying aquifer.

1.4 Project Description and Milestones

1.4.1 *Proposed Project Description*

The proposed project will construct 1,600 LF of 24-inch pipeline, which will allow for increased conveyance capacity of surplus CVP water from the FKC, by the District, to a 32-acre recharge basin. Through a separate agreement with High Speed Rail Authority and SWID, the recharge site will be built outside the scope of this grant and is expected to be completed by October 2020. The

new 24-inch pipeline will connect to the District's existing 36-inch mainline, travel westerly and connect to two existing 12-inch turnouts upstream of the recharge site, construct a new turnout and metered 14-inch outlet for the recharge site, and then reconnect to the existing 15-inch pipe downstream.

The recharge basin will have the capacity to recharge 14.7 AFD, while the current District facilities only have the capacity to convey 12.3 AFD. The upgraded 24-inch pipeline will increase the capacity to convey 31 AFD to optimize recharge capacity and meet irrigation demands concurrently. The Project's goal is to improve drought resiliency in dry years when there is a shortage of surface supplies to meet irrigation demands, and increase the District's ability to deliver water for groundwater recharge in surplus or wet years at times when available surface supply is greater than irrigation demand. Recovery of the previously banked water will be accomplished by use of existing nearby landowner wells. SWID's total water demand is known through evapotranspiration (ET) sensing of irrigated lands, and through metered groundwater production wells which supply the City of Shafter and City of Wasco. Surface water deliveries from the CVP and water banking partners are metered and allow SWID to calculate their total incoming surface water flows. The difference between SWID's water demand needs and the amount of total surface water flows available to them is met through groundwater pumping. Through construction implementation of this Project, SWID will be able to increase conveyance capacity to capture wet year water flows for recharge. The recharged water would then be made available to nearby landowners when there is not enough surface water flows in dry years to meet irrigation needs. The additional water conveyed to the District would be a groundwater credit that would help benefit their water management practices in light of SGMA.

The total Project cost for construction of the Project is approximately $1,098,110 (see Section 2 for budget estimate). SWID is requesting $500,000 from the USBR for this Project, the remaining ($598,110) would be provided by the District. If the requested grant funding is awarded to the Project, a grant agreement is anticipated to be signed by December 2020; construction bidding would take place in early 2021 with construction completed by late 2022. 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.

1.4.2 *Tasks and Milestones*

Eight tasks are defined below to accomplish the Project work and are organized to parallel 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. *Deliverables:* Preparation of invoices and other deliverables, as required.

Task 2: Project Reporting - Reports on the Project financial status will be submitted on a semi-annual basis over the two-year period. A Final Project Report will be prepared upon Project completion. *Deliverables:* Submission of semi-annual status reports, significant development

reports, and a Final Project Report as specified in the grant agreement.

Task 3: Project Design – The District has decided on the preliminary alignment for the proposed Project with final alignment to be decided once all utility locations are confirmed. All design work is anticipated to be completed in early to mid-2021, prior to the start of construction. *Deliverables:* Final Design.

Task 4: Environmental Documentation and Regulatory Compliance – An environmental document that meets the requirements of CEQA and NEPA will be prepared for the Project. *Deliverables*: Coordinate with Reclamation on confirming compliance of NEPA documentation. Complete and report results of the pre-activity biological survey at the time of construction.

Task 5: Permits and Approvals - As much as possible, the District will keep the Project's pipe alignment to the District or Kern County right of way. Should the District need to place the pipe in the county right of way, an encroachment permit will be applied by the District to the Kern County Permit office. A Caltrans permit will be obtained to do a jack and bore crossing of Highway 43. A City of Shafter Permit may be applied for as part of the intersection of HWY 43 and Riverside Street is in the City of Shafter right of way. An evaluation will be made by the District's legal counsel regarding whether construction of the Project will require any additional permits. *Deliverable*: Complete necessary permitting/approval activities prior to construction activities.

Task 6: Project Construction - The Project includes the abandoning in place of existing 15-inch pipe, installation of new 24-inch pipe, and reconnection to two existing turnouts upstream of the recharge site, as well as reconnection to the existing 15-inch pipeline downstream of the recharge site. Work under this task includes mobilization, site preparation (pre-construction surveys, pre-construction meetings, and equipment delivery), and installation of pipeline, connections and turnout. A construction contractor will furnish and install all required materials. *Deliverables:* See Construction Administration task below.

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. *Deliverables:* Multiple deliverables including a (1) abstract of bids received; (2) successful bid proposal; (3) construction progress pay estimates; (4) start-up and testing verification; (5) Notice of Completion; and (6) "As-Builts" drawings.

The proposed Project will be implemented under the direction of Shafter-Wasco ID. A consultant will provide design, construction management, administrative, reporting assistance, and coordination with local firms, as needed. Dana Munn, SWID's General Manager, will have responsibility for overall Project Management and is a California-licensed Civil Engineer.

1.5 Performance Measure

While the increased conveyance capacity is a simple calculation comparing the conveyance capacity of the District's existing 15-inch pipeline to the proposed 24-inch pipeline, actual Project

performance would be measured by the amount of water brought into the Farmers Cooperation Recharge Project. The Project scope of work does not include the construction of the recharge basin, however, prior to the proposed Project there is no existing turnout to the recharge basins. As such, all water brought into the recharge basins is a realized benefit that can be measured through the installation of a flowmeter on the 14-inch outlet to be constructed as part of this Project. The District will maintain records of all water supplies brought into the Farmers Cooperative Recharge site.

1.6 Evaluation Criteria

1.6.1 *Evaluation Criterion A: Project Benefits*

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

The Project will build long term resilience to drought by bringing in wet year surplus water to recharge and meet irrigation demand simultaneously at the Farmers Cooperative Recharge Site for later beneficial use during dry years. The approximate amount of water saved is 2,088 AFY. By a meter on the 14-inch outlet, the District will maintain records of all surface water delivered to this recharge site and keep track of the stored water. While the water conveyed to the recharge site will be recovered for later beneficial use by nearby landowners, it can be claimed as a benefit to the entire region as SWID is an active water banking partner with members within the Poso Creek Integrated Regional Water Management (IRWM) group. SWID is also a member of the Kern Groundwater Authority, which is working to put together a groundwater sustainability plan which would outline various ways each of its members will help to make the Tulare Lake Basin (Basin) sustainable by 2040. Bringing in supplemental surface water for recharge would increase SWID's, as well as the overall Basin's, groundwater credits towards a sustainable groundwater basin. The incremental increase in conveyance capacity to the basin provides a basis and a measure for the drought resiliency claim of this Project during dry years and drought conditions.

The recharge site to be constructed by High Speed Rail Authority is anticipated to recharge CVP wet period water into the District at a rate of 0.5 feet per day on 32 acres, at a frequency of 4 out of 10 years. The percolation rate of 0.5 feet per day was based off the average recharge rate in spreading ponds in neighboring Southern San Joaquin Municipal Utility District's (SSJMUD) recharge basin. Of the 32 gross acres of the proposed Project site, there is an assumed 10% loss of area due to borders, levies, and dikes which results in 29 acres of wetted area. Based on 29 acres of wetted area and a percolation rate of 0.5 feet per day, the recharge site has a percolation rate of 14.7 AFD. The current 15-inch pipeline, assuming 5 feet per second velocity, has a conveyance capacity of 6.15 cubic feet per second (CFS) or 12.3 AFD, which does not meet the recharge capacity of the Famers Cooperative Recharge Site. The proposed Project will construct a 24-inch pipeline that will help meet the percolation rate of the recharge site to help maximize effectiveness of the recharge site. The 24-inch pipeline, assuming a 5 feet per second velocity, has a conveyance capacity of 15.7 CFS or 31 AFD. The conveyance capacity of the proposed pipeline exceeds the daily recharge capacity of the site and allows water to be delivered off-peak times when available.

This component of the District infrastructure has been constructed such that the District's recharge facility for this banking agreement will remain operational for the foreseeable future. For the purposes of this application, however, the expected operational 'life' of the Project is estimated at 50 years for the main components to the Project (i.e., pipeline, outlet pipe, and turnout). 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 replace certain components of their water delivery infrastructure.

Will the project make additional water supplies available?

As there had not been any previously existing turnouts to feed into the Farmers Cooperative Recharge Site, all water conveyed to the recharge site is water saved. The amount of water saved would be the quantity of water conveyed through the new 24-inch pipe, subtracting out the water conveyed for irrigation demand upstream of the recharge site. The amount of water saved equates to approximately 2,088 AFY.

There are two turnouts upstream of the Farmers Cooperative Recharge Site that feeds two parcels of approximately 42 acres. Estimating an irrigation demand of 10 gallons per minute (gpm) per acre, the conveyance capacity needed upstream of the recharge site is approximately 420 gpm, or approximately 2 AFD. As the new 24-inch pipeline has a conveyance capacity of 31 AFD, approximately 29 AFD (31 AFD – 2 AFD) will be claimed as the amount of additional water the Project would make available.

While construction of the recharge site is expected to be complete in October 2020, construction implementation of the conveyance capacity improvements to the recharge site is expected to be completed by December 2022. Once the District's new Farmers Cooperative recharge facilities come online, the District will have the opportunity to save water through recharge during wet years and will contribute to drought resiliency during dry years. CVP wet year period will be conveyed to the recharge site at a capacity of approximately 29 AFD. Water will be conveyed for recharge during the irrigation shoulder months (January through March and October through December) for approximately 6 months (30 days per month) for a frequency of 4 out of 10 years, estimated at 870 AF/month, 5,220 AF for six months, which equates to an estimated annual capacity of 2,088 AFY (5,220 AFY x 4/10) of water savings. The estimated 10-year benefit is approximately 20,880 AF.

The amount of additional water the Project would make available to the District is estimated to total 4% of the District's total water supply. Which is calculated by dividing the estimated 2,088 AFY of water savings by the average 55,700 AFY of FKC inflow.

As a contractor of CVP water, SWID has been heavily impacted by the subsidence in the FKC causing decreased conveyance capacity. Through the Conveyance Improvements for the Farmers Cooperative Recharge Project, SWID would increase their own operational flexibility. With the completion of the Project, the District would have the ability to convey greater amounts of water to recharge for storage and recovery for later beneficial use during dry years. The Project would result in SWID being less impacted at times when there is not enough conveyance capacity in the FKC to fulfill regional irrigation demands as well as provide return supply as groundwater for times of drought or dry periods.

Will the project improve the management of water supplies?

The amount of water better managed would be the average 2,088 AFY recharged at the Farmers Cooperative Recharge facilities. This amount of water better managed is approximately 4% of the

District's total water supply which is the estimated amount of water batter managed divided by the average yearly inflow off the FKC (2,088 AFY / 55,700 AFY).

SWID's ability to shift to sustainable groundwater practices provides conveyance capacity on the FKC to other regional partners who do not have the same operational flexibility. As SWID is a water banking partner and member of the Poso Creek IRWM group, surface and groundwater is managed collectively on a regional basis. Through various water banking agreements, water stored in the Farmers Cooperative Recharge site could be made available to regional partners.

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

Metering of water recharged from the Farmers Cooperative Recharge Facility would give the District a better idea on the health of the underlying aquifer. Tracking this gives in depth information to the effective use of CVP supplies during years of excess and shortage. The District maintains historical groundwater elevation level data for production wells and monitoring wells. Through a meter on the District turnout, the District will have records of how much water is being recharged through the Project. The recorded increase in groundwater level would then reduce the amount of lift required to pump groundwater. The reduction in energy can be calculated based on groundwater levels and quantities of water recharged. The District will continue to maintain groundwater elevation data so that it can compare pre-Project and post-Project water level conditions.

Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.

The potential benefits include supplying Project recovered groundwater in the dry years to mediate decreased water surface supplies that directly affect the local needs for fish, wildlife, or the environment. By making excess water available, less demand is placed on other sources by the IRWM Group, thus making some additional water available to the Bay-Delta.

1.6.2 *Evaluation Criterion B: Drought Planning and Preparedness*

Explain how the applicable plan addresses drought. Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan established through a collaborative process?

In collaboration with other members of the Poso Creek IRWM Group (Group), SWID has entered into an agreement with Reclamation to develop a Drought Contingency Plan (DCP). As part of the development of the DCP, SWID developed a Drought Plan Memo (Memo) that includes multiple response and mitigation actions to address drought in the region. This memo is included in Appendix B for reference. Development of the Memo is part of the DCP and will be included as an appendix to the final DCP. Additionally, the Group has established a Drought Task Force made up of the Poso Creek Group members and various stakeholders in the region to help guide the development of the final DCP. This Task Force will carry out action developed by the Group under the Outreach and Communications Plan (O&C Plan) that was developed under Phase I of the DCP

development with Reclamation. This O&C Plan identifies a plan to conduct stakeholder meetings and include public/stakeholder input for work to be conducted under the DCP.

DCP development will focus on building off previous drought related plan such as that conducted under IRWM and SGMA planning. As part of the 2019 IRWM Plan Update, a climate change assessment was included in the plan to assess current and future drought conditions in the Region. The DCP will build off this work to develop a drought dashboard to better manage the water resources in the region and to mitigate effects of future drought while accounting for future effects of climate change. Additionally, in coordination with North Kern Water Storage District (NKWSD), the District developed a management area plan to comply with SGMA. This management area plan identified both district's service area, available surface water supplies, average precipitation and crop evapotranspiration data to estimate their sustainable groundwater yield. After assessment, projects and management actions were developed to by implemented over the planning horizon to achieve groundwater sustainability by 2040. In order to evaluate sustainability of the management area, SWID developed a monitoring network to assess the trend of groundwater conditions results from current management actions. Implementation of these groundwater practices such as the proposed Project would be a direct reflection of positive management actions to sustain groundwater levels and bolster drought resiliency in the region.

Through the District's implementation of SGMA and their participation in the Poso Creek IRWM Group, SWID is actively implementing projects to increase the capabilities of the region to better manage water supply in advance of a drought. These projects, such as the construction implementation of the Conveyance Improvements for the Farmers Cooperative Recharge, are identified in both completed plans to address drought. Additionally, this project is included in the Memo in Appendix B and will further SWID's drought planning and mitigation efforts in the region.

Does the drought plan include consideration of climate change impacts to water resources or drought?

As previously mentioned, an assessment of climate change impacts was conducted as part of the 2019 IRWM Plan Update. The DCP development is building off this work and will update accordingly to account for future climate change. Additionally, the DCP will also incorporate work conducted under SGMA, which provides an overview of current groundwater conditions and outlines best groundwater management practices for implementation to achieve sustainability by 2040. As seen in the District water budget summary shown in Section 1.2.2, groundwater is pumped to make up the difference between District need and actual surface water inflow for the year. The management area plan realizes certain current practices as unsustainable with longer periods of drought expected due to climate change and works to provide sustainable solutions to future water needs through projects such as the one proposed.

The DCP will acknowledge the District's projected population growth and corresponding increase in water needs, as well as declines in surface water allocations in years of drought and limited

conveyance capacity through the FKC due to subsidence. As part of the DCP, the Drought Plan Memo discusses the vulnerabilities of water resources that are susceptible to drought. The impacts of climate change include potential reduction of water supply, a decrease on groundwater elevations, and lower storage of surface water.

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

The proposed Project is an outlined mitigation action (or project) in SWID's Drought Plan Memo (Appendix B). While the final DCP is in the developmental stage, SWID's memo accounts for a preliminary assessment of drought response and mitigation actions to proactively implement projects to offset future potential drought. Implementation of this project will offset future drought impacts by adding conveyance capacity that will allow for added water to the region that can later be returned during dry or drought years.

Additionally, under SGMA implementation, drought related planning has been applied throughout the region. Projects related to drought resiliency continue to be a priority. As outlined in the management area plan under SGMA, the District's goal for sustainability involves balancing of their average annual inflow and outflow of water so that negative changes in groundwater is prevented. When feasible, the District will prioritize projects that would bring in supplemental water to the basin and/or address the chronic lowering of groundwater levels. As groundwater level conditions are commonly used as an indicator for groundwater storage and land subsidence, projects that reduced chronic lowering of groundwater levels, by proxy, would also address other sustainability indicators. Through groundwater monitoring, the District implements management practices to maintain groundwater levels, thereby planning for changing drought conditions.

The proposed Project is identified as one of the projects to be prioritized within the drought plan as one of the District's strategies to bring in supplemental water to the basin to recharge and reduce chronic lowering of groundwater levels. The Project would help to prepare for, and mitigate groundwater usage during, drought conditions. As discussed in Section 1.5.1, the Project's benefits include bringing in an additional 2,088 AFY of surplus water supplies to be stored and credited to the District for later beneficial use. Overall, the implementation of the Project will meet both the SGMA and the IRWM Plan goals by supporting the long-term drought planning effort to improve regional water conveyance, enhance reliability effectiveness of surface water supplies delivered to the Region, and enhance regional conjunctive water use.

In previous years, the District has made use of out-of-district recharge ponds and banking programs to take advantage of wet year water supplies. Through the Farmers Cooperative Recharge facilities and the proposed conveyance improvement to the recharge facilities, SWID will be able to better

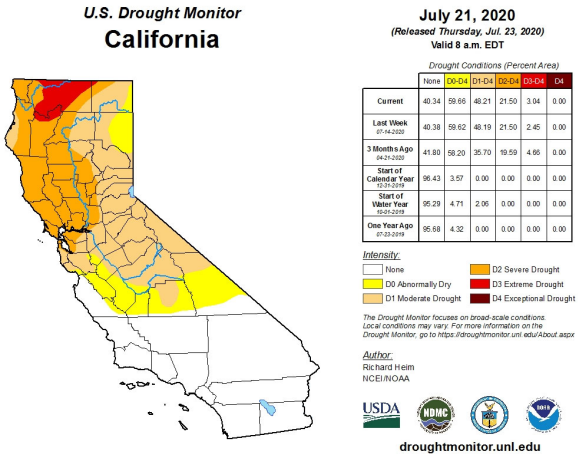
manage the District's own drought resiliency by retaining the leave behind water from its banking partner.

1.6.3 *Evaluation Criterion C: Severity of Actual or Potential Drought Impacts to be addressed by the Project.*

Describe existing or potential drought conditions in the project area. Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experience drought conditions (please provide supporting documentation).

Due to climate change, California has been faced with longer and more severe drought periods, with short more intense wet periods. As a CVP contractor, SWID has been severely impacted by the subsidence of the FKC causing decreased conveyance capacity to the region. Subsidence monitoring data shows that land through SWID had subsided approximately 1.5 to 6-inches throughout the extent of the SWID and NKWSD boundaries during the years 2015-2016. Both the climate and decline in the FKC conveyance capacity has led to increasingly unstable surface water deliveries in the region. Even during normal to wet periods, the conveyance capacity through the FKC may make it so that SWID is unable to completely obtain their share of water.

According to the Drought Monitor 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. However, the figure below showing the 2020 Drought Monitor map of California shows the Kern County area being in "None" or non-drought conditions with variable conditions from "None" to "Moderate Drought" observed three years prior from 2017-2019. Although drought conditions have decreased in recent years, projected climate change estimates indicate that drought conditions will only become more frequent and severe. As California faced its last major drought in 2016, the next projected drought is set to occur in the near future.



This Project would help to provide a more stable water supply by conveying water to the District for storage whenever it is available off the FKC. This would help SWID meet their water needs, while also freeing up conveyance capacity on the FKC for other CVP contractors.

1.6.4 *Evaluation Criterion D: Project Implementation*

The Project schedule shown below in Figure 4 is structured based on the Tasks listed in Section 1.3.2. The schedule assumes a signed grant award by December 2020, and construction starting early 2021 shortly after environmental documentation is complete. The Project is expected to be completed by December 2022, including project closeout, which is within Reclamation's 24-month project duration. Project task durations are based on previous engineering experience.

	Task Name	Duration	Start	Finish
1	SWID Farmers Cooperative Recharge			
2				
3	Signed Agreement	1 day	Tue 12/1/20	Tue 12/1/20
4	Task 1 - Grant Administration	523 days	Tue 12/1/20	Thu 12/1/22
5	Task 2 - Project Reporting	523 days	Tue 12/1/20	Thu 12/1/22
6	Task 3 - Project Design	131 days	Tue 12/1/20	Tue 6/1/21
7	Task 4 - Environmental Documentation	262 days	Tue 12/1/20	Wed 12/1/21
8	Task 5 - Permits and Approvals	132 days	Tue 6/1/21	Wed 12/1/21
9	Task 6 - Project Construction	155 days	Tue 3/1/22	Sat 10/1/22
10	Task 7 - Construction Management and Administration	218 days	Sat 1/1/22	Tue 11/1/22

Figure 4: Project Schedule

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.

The Project will be implemented as follows: Activities would begin around December 1, 2020; design is anticipated to be completed six months after the signed agreement; construction is estimated to begin after July 2021 or as soon as environmental compliance is met and design complete; and all project work and reporting would be completed by December 2022. A draft Project Completion Report will be submitted to Reclamation for Project Manager's comment and review no later than 90 days after project completion, followed by a Final Report addressing comments. The report shall be prepared and presented in accordance with the provision of a grant contract. A Grant Schedule estimating the phases and milestones for completion of the work is shown in Figure 4, and further information is located in Section 1.4.2.

Describe any permits that will be required, along with the process for obtaining such permits.

As much as possible, the District will keep the Project's pipeline alignment to the District or Kern County right of way. Should the District need to place the pipe in the county right of way, an encroachment permit will be applied by the District to the Kern County Permit office. However, for pipe placed in District right of way, it is noted that the District is not subject to the County's jurisdiction with regard to building and grading permits. A Caltrans permit will be obtained to do a jack and bore crossing of Highway 43. A City of Shafter Permit may be applied for as part of the intersection of HWY 43 and Riverside Street is in the City right of way. An evaluation will be made by the District's legal counsel regarding whether construction of the Project will require any additional permits.

The District will comply with CEQA and NEPA before commencing any ground disturbing activities, as discussed further in Section 3.0. Additionally, a pre-activity survey will be conducted by a qualified biologist prior to the start of construction.

Describe any engineering or design work performed specifically in support of the proposed project.

The Project will be constructed on either District or Kern County right of way. The District will contract with an engineering consultant(s) to design the connections, pipeline and turnout. A preliminary pipeline alignment has been proposed, but final alignment will be approved once utilities have been cleared and permits obtained.

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

The District's banking agreement has already been established and the pipeline proposed for construction is a replacement to an existing undersized pipeline, as such, no new policies or administrative actions are required to implement this Project.

Describe how the environmental compliance was developed. Have the compliance costs been discussed with the local Reclamation office?

The environmental compliance estimate was based off previous experience with similar projects and has not been discussed with a local Reclamation office. As seen in the section outlined in previous experience working with USBR, the District has many experiences working with USBR and is well versed in preparing the environmental documents needed to implement such a project. It is anticipated that minimal environmental costs will be incurred.

1.6.5 *Evaluation Criterion E: Nexus to Reclamation*

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

The Project will contribute to the recharge component of the District's spreading facility for management of water supplies (i.e., banking recharge and return) for SWID. As a contractor of Reclamation's CVP, SWID receives federal waters and while the specific Project location is not a Federal facility, it will be diverting CVP water for In-District use.

1.6.6 *Evaluation Criterion F: Department of Interior Priorities*

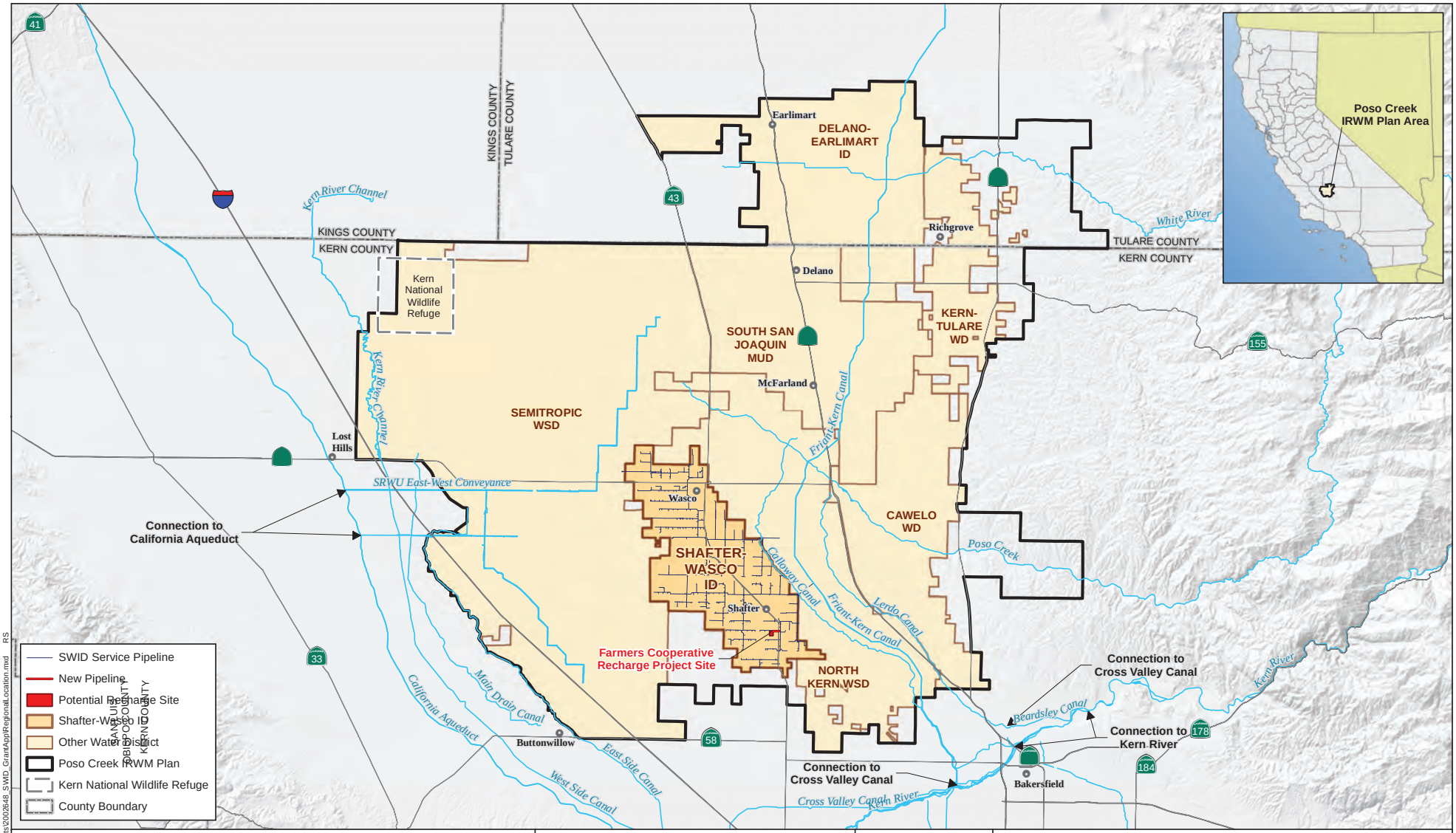
Priorities met by the Project are as follows:

Creating a conservation stewardship legacy second only to Teddy Roosevelt: The Project will grant the District the ability to better manage water supplies by increasing their capacity for groundwater recharge in wet years as well as improve drought resiliency in years where there is a shortage contributing to conservation stewardship.

Restoring trust with local communities: The Project provides further reliability on future water supplies to the benefit of the region through absorption of the available water supplies during wet periods. This in turn will provide relief for the demand of surface water supplies during times of short water supply or drought due to access to the previously stored water through improved conveyance. This fosters trust between SWID and the community as they provide greater water

supply to the region for all to benefit. SWID is a member of the Poso Creek IRWM Group which fosters relationships with other districts in the region and creates a cohesive environment where they work alongside one another to improve drought resiliency in the community. The Poso Creek IRWM Group aims to provide collaborative regional water management and implementation activities that will further enhance water supply management in the region. Through participation in this group, SWID has had the opportunity to improve water management, resolve various water supply issues, and develop concrete relationships with those districts also participating.

Modernizing our infrastructure: The implementation of this Project utilizes new technology for a modernized water delivery system through the updated design and operation of a new pipeline which will provide more opportunity for delivery through the recovery of that water which wouldn't have been able to be stored previously.


Poso Creek IRWM Plan Area
KINGS COUNTY
TULARE COUNTY
KERN COUNTY
Earlimart
DELANO-EARLIMART ID
Richgrove
Delano
Kern River Channel
White River
Kern National Wildlife Refuge
SOUTH SAN JOAQUIN MUD
KERN-TULARE WD
McFarland
SEMITROPIC WSD
Lost Hills
Friant-Kern Canal
SRWU East-West Conveyance
Wasco
CAWELO WD
Connection to California Aqueduct
SHAFTER-WASCO ID
Shafter
Poso Creek
Calloway Canal
Lerdo Canal
Farmers Cooperative Recharge Project Site
NORTH KERN WSD
Connection to Cross Valley Canal
Kern River
Beardsley Canal
Main Drain Canal
California Aqueduct
Buttonwillow
East Side Canal
West Side Canal
Cross Valley Canal
Bakersfield
SWID Service Pipeline
New Pipeline
Potential Recharge Site
Shafter-Wasco ID
Other Water District
Poso Creek IRWM Plan
Kern National Wildlife Refuge
County Boundary
0 2.5 5 10
Miles
N
W
E
S
Farmers Cooperative Recharge Project
Kern County, California
Shafter-Wasco Irrigation District
GEI Consultants
REGIONAL LOCATION
JUNE 2020
FIGURE 1
10-Jun-2020
Z:\Projects\2002648_SWID_GrantApp\RegionalLocation.mxd RS

SOURCE: Aerial Imagery from NAIP 2018.

Farmers Cooperative Recharge Project
Kern County, California

Shafter-Wasco Irrigation District

GEI Consultants

Project Location

JUNE 2020

FIGURE 3

10-Jun-2020 Z:\Projects\2002648_SWID_GrantAppl\ProjectLocation.mxd RS

2. Project Budget

2.1 Funding Plan and Letters of Commitment

Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments). Any costs that will be contributed by the applicant.

The District's cost-match portion will be covered by the District's Capital Reserve Fund. The District will allocate a portion of the Reserve Fund for 2021 and into 2022 to be utilized to meet the cost obligations for the pipeline, turnout and outlet. The District adopts an annual budget during the fall of each year.

Any third-party in-kind costs (i.e., goods and services provided by a third party). No third-party in-kind costs are identified for the Project's budget.

Identity and amount of funding to be provided by funding partners. No other funding partners need to be identified.

Any cash requested or received from other non-federal entities. No other Federal funding has been requested or received for the proposed work.

Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied. The District does not have any pending funding requests that have not yet been approved for the Project components.

Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
Shafter-Wasco Irrigation District Monetary Contribution	$598,110
Non-Federal Subtotal	**$598,110**
Other Federal Entities	
Other Federal	**$ -**
Requested Reclamation	**$500,000**
Total Project Funding	**$1,098,110**

In addition, please identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. No project costs have been incurred nor will occur prior to the award.

2.2 Budget Proposal

The total Project budget for the *Conveyance Improvements for Farmers Cooperative Recharge* is estimated at $1,098,110 with $500,000 in requested grant funds (Federal Cost Share) and $598,110 in Non-Federal Cost Share funds. It is expected that the construction of the new District turnout along with various connections to existing farmers turnouts and existing pipeline, and the installation of the new pipeline will be completed by contractors. 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. Refer to Table 2-1a, which provides a summary of the estimated budget, by task, including Reclamation and Applicant contributions.

The Project budget was prepared based on the level of effort required to implement the project as discussed in Section 1.3.2 – Tasks and Project Work. The Work Plan identifies and describes eight tasks used to define the overall Project Scope, Schedule, and Budgets:

Task 1: Grant Administration
Task 2: Project Reporting
Task 3: Project Design
Task 4: Environmental Documentation and Regulatory Compliance
Task 5: Permits & Approvals
Task 6: Project Construction
Task 7: Construction Administration

Budget Table Format:
Several tables have been prepared in support of these budget estimates, which immediately follow this section in the order shown below.

a. Table 2-1a provides a task-by-task summary of the estimated budget. Table 2-1b summarizes program funding sources, including Reclamation and Applicant contributions.
b. Tables 2-2 through 2-8 provide a summary of Project costs by task and follow the "sample budget proposal format" from the FOA.
c. Table 2-7 provides a summary of Project Construction costs for the conveyance improvements. Refer to Table 2-7a and 2-7b for a detailed breakdown of costs.
d. Table 2-8 provides a summary of the aggregated costs for implementation of the Project.
e. Table 2-9a provides a listing of burdened hourly rates for District Staff.

The Standard Budget Form 424C is included at the end of this Section 2.4 – Budget Form SF 424C, which follows the budget narrative.

Table 2-1a. Budget Summary by Task

Task Number - Name	Total Cost
Task 1 - Grant Administration (See Table 2-2)	$28,294
Task 2 - Project Reporting (See Table 2-3)	$30,290
Task 3 - Project Design (See Table 2-4)	$86,693
Task 4 - Environmental Documentation and Regulatory Compliance (See Table 2-5)	$35,051
Task 5 - Permits and Approvals (See Table 2-6)	$6,517
Task 6 - Project Construction (Table 2-7)	$822,686
Task 7 - Construction Management and Administration (See Table 2-8)	$88,579
TOTALS	**$1,098,110**

Table 2-1b. Program Funding Sources

Funding Sources	Percent of Total Project Costs	Total Cost by Source
Recipient Funding	54%	$ 598,110
Reclamation Funding	46%	$ 500,000
Other Federal Funding	0%	$ -
TOTAL PROGRAM COSTS	**100%**	**$ 1,098,110**

Cost Estimating Notes:

1) This table is supported by detailed tables which are included immediately following the Budget Narrative.
2) Task 4: Environmental Documentation and Regulatory Compliance - If awarded, the District will coordinate with Reclamation to complete the necessary environmental compliance.
3) Salaries, Wages, and Fringe Benefits for District office are shown in Table 2-9a.
4) Reference the Tasks and Project Work (Section 1.3.2) for task descriptions.
5) Refer to the Table 2-10 for a Budget Summary of all Projects costs.
6) The number of personnel hours was estimated from District and Consultant engineer experience based on the previously completed well drilling, well equipping, and pipeline installation projects.

2.3 Budget Narrative

***Salaries and Wages**:*

Dana Munn, General Manager for Shafter-Wasco Irrigation District, is the representative for the

Applicant and will provide overall Project Management. The P roject will be completed utilizing the District's existing Professional Services Agreement and by a competitive bid process for a contractor to complete the construction items. In this regard, the District's office staff will coordinate with the Professional Services provider to perform the required project administration, reporting, design, environmental compliance, and construction administration. The work under the Project will be completed as part of the District's labor account. Invoices for costs will consist of timesheets organized with clearly labeled indicators marking time spent on the Project.

Tables 2-2 through 2-8, expenses under "Salaries and Wages", provide an estimated cost to complete the work under each task. The tables provide a summary of the estimated hours (by job classification) necessary to complete the work in each task and their applicable hourly rates. Expenses were calculated as the hourly rate times the estimated number of hours per task. For Admin and Design, approximately 40 hours was allotted for the General Manager to review and approve various contract and design documentation. Approximately 20 hours was allotted for the General manager to review the permit applications, with 84 hours allotted in construction administration for the general manger to review and approve of change orders, schedules, as-builts and redlines, and other misc. contract deliverables. Please refer to Table 2-9a for the fully burdened rates of the District staff. It is noted that the District's rates increase incrementally each year.

Fringe Benefits:

Fringe benefits for District personnel vary from between 58 percent to 69 percent of the base hourly rate, depending on level of staff. Fringe benefits include medical insurance, Employee's Pension Plan, Social Security, District portion of Medicare, Dental Insurance, Vision Insurance, Life Insurance, and Disability Insurance. Refer to Table 2-9a for a summary of the fringe benefits by job classification for District personnel. It is noted that the applicant has not worked through a Federally approved benefit agreement.

Travel:

District will not be charging any travel expenses to the Project, nor will they be asking for reimbursement of any incidental travel costs.

Equipment:

The District will not be charging any Equipment rentals to the Project, nor will they be asking for a reimbursement for Equipment rentals.

The proposed Project components will be advertised for bid and the District will be soliciting sealed bids for construction of the Project work. In this regard, the District will contract with a local contractor who will provide costs to "furnish and install" the necessary project components. Equipment expenses have not been included since the districts will not be purchasing or leasing any equipment to construct the Project works, but rather the successful contractor will be providing such equipment as part of the work. Refer to Construction Estimate. Accordingly, no "Equipment" expenses have been included.

Materials and Supplies:

Acquisition of materials and supplies for office use is not anticipated; rather, District will provide

any incidental supplies. Accordingly, no "Materials and Supplies" expenses have been included.

Contractual:

The District plans to use an existing Professional Services Agreement with one of its engineering consultants, to assist the District with implementing the Project including providing administrative, reporting, design, environmental, bid phase, and construction management assistance as needed. In this regard, the District operates with minimal professional staff and have maintained a long-standing relationship with the consultants, who are familiar with District facilities and operations. Additionally, sub consultants will be retained to supplement the engineering consultant's technical expertise. It is noted that work described in the work plan other than construction will be completed primarily by the engineering consultants, with assistance from the District. In this regard, costs for the engineering consultant and sub consultants to complete the work have been estimated under the category "Contractual" for all tasks. Refer to Tables 2-2 through 2-8 under the category "Contractual" for a summary of the contractual costs. A copy of the fee schedules for the engineering consultant and sub consultants are included in Table 2-9b. The fee schedules list the billing rates by job classification. The contractual costs were determined by multiplying the total number of hours by the applicable labor rate identified in the fee schedules. The budgets under the "Contractual" category for each task are estimates now. However, they have been prepared based on the level of effort to complete past projects by the consultants and sub consultants, whom over the years, have provided similar services to the District for projects that have been similar in scope and complexity.

The estimate presented is based on recent experience and recent work done by the consultant for implementation of various projects funded by Reclamation and similar well and pipeline design projects. The total was determined by multiplying the number of hours by job classification by the applicable hourly rate. It is noted that the consultant rates increase incrementally each year.

Task 4 – Environmental and Regulatory Compliance:

The District intends to work with Reclamation to determine the potential environmental effects the proposed Project may have in relation to NEPA, NHPA, ESA, and the Clean Water Act to ensure compliance with all applicable environmental laws.

Proposed activities are located on either district-owned and maintained rights of way, Kern County rights of way, or City of Shafter rights of way. All proposed work will be in previously disturbed ground, accordingly, it is anticipated that it will not be difficult to obtain permits or approvals necessary for the work that is the subject of this Proposal since it is expected that this Project will also have minimal environmental effects. Engineering Consultant costs are based on the recently signed Task Order 05-2020 with SWID related to Pipeline Improvements for Bell Recharge.

Task 5 – Permitting:

"Environmental Compliance and Other Costs" were estimated and include costs associated with filing various required permits prior to construction commencing. The permits include an NPDES SWPPP permit, a PM-10 Dust Control permit, along with a Caltrans permit to cross Highway 43. The costs provided are estimates based on fee rates published by the correlating regulatory agency. The cost for the NPDES Application Filing Fee is determined based on the area of disturbance estimated to be 1 acre of land. Based on inspection of the FOA, it is understood that Reclamation

will determine who will perform the work under this category (i.e. Reclamation, the Applicant, or a consultant). With regards to CEQA, an Initial Study will be completed, and these requirements may fulfill the environmental requirements.

Task 6 – Project Construction:

Costs shown for the design and construction implementation were based on similar work completed by the District, and their consultant with neighboring districts that relate to the Project. Project wide items were estimated based on SWID's recently completed Diltz Groundwater Recharge Intertie Pipeline Project (Diltz is about 3.0 miles and costs were scaled down to represent the 0.3 miles for the Project). Details related to the costs of the Project Wide Items can be found in Table 2-7a.

The conveyance improvements costs were based on various recently completed projects similar in scope to the Project components. Costs for the Jack and Bore Crossing of HWY 43 are based on the Rosedale-Rio Bravo Water Storage District Central Intake Pipeline Project which required a Jack and Bore to cross Stockdale HWY. All other costs related to conveyance improvements were based on Semitropic Water Storage District's XYZ System and Cox Canal Intertie costs as well as SWID's Diltz Intertie Pipeline Project. Further details of the conveyance improvement costs can be found in Table 2-7b.

Surveying related to staking of the alignment is based on costs from SWID's Diltz Intertie Pipeline Project. The cost of construction materials testing is based on costs incurred in a month for compaction testing of backfill, including laboratory testing and sieve analysis for Rosedale Rio-Bravo Water Storage District's Central Intake Pipeline.

Task 7 – Construction Administration:

Expenses related to the Bid Advertisement and plan and specification production are based on costs for a neighboring district to advertise their project in the local newspaper and to print three copies of their plans and specs.

Other Expenses:

No "Other Costs" are included in the budget. Accordingly, this category does not apply.

Indirect Costs:

No indirect costs are included in the budget. Accordingly, this category does not apply.

Table Number 2-2

Task 1. Grant Adminstration[1]

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)				
District Administrator	[redacted]			$2,184.00
Total Estimated Cost				$2,184.00
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	30	HR	$7,950.00
Grade 5	$ 196.00	40	HR	$7,840.00
Grade 3	$ 148.00	40	HR	$5,920.00
Admin	$ 110.00	40	HR	$4,400.00
Total Estimated Cost				$26,110.00
Total Direct Costs				$28,294.00
Total InDirect Costs				
Total Task Cost				$28,294.00

[1] Total amount is based on the amount expended on similar projects for neighboring districts in the Poso Creek IRWM Plan

[2] Assumes time for Administrative Assistant and includes one Kick-off Meeting for Award and grant administration as needed.

Table Number 2-3
Task 2. Project Reporting[1]

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)[2]				
General Manager				$0.00
District Administrator				$0.00
Total Estimated Cost				$0.00
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	30	HR	$7,950.00
Grade 5	$ 196.00	35	HR	$6,860.00
Grade 3	$ 148.00	60	HR	$8,880.00
Admin	$ 110.00	60	HR	$6,600.00
Total Estimated Cost				$30,290.00
Total Direct Costs				$30,290.00
Total InDirect Costs				
Total Task Cost				$30,290.00

[1] Total amount is based on the amount expended on similar projects for neighboring districts in the Poso Creek IRWM Plan

[2] Assumes time for General Manager and Administrative Assistant includes gathering costs, reviewing, and finalizing financial and progress reports

Table Number 2-4

Task 3. Project Design[1]

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)				
General Manager	[redacted]			$6,097.20
Total Estimated Cost				$6,097.20
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	70	HR	$18,550.00
Grade 5	$ 196.00	85	HR	$16,660.00
Grade 3	$ 148.00	100	HR	$14,800.00
Admin	$ 110.00	40	HR	$4,400.00
Surveying[2]				
Surveying Consultant	$ 6,985.00	1	LS	$6,985.00
Surveying Consultant	$ 9,400.00	1	LS	$9,400.00
Utility Locating	$ 2,300.00	1	LS	$2,300.00
Geotechnical	$ 7,500.00	1	LS	$7,500.00
Total Estimated Cost				$80,595.00
Total Direct Costs				$86,692.20
Total InDirect Costs				
Total Task Cost				$86,693.00

[1] Total amount is based on the amount expended on similar projects for neighboring districts in the Poso Creek IRWM Plan.

[2] Surveying, Utility Locating, and Geotechnical costs based on Task Orders from service providers used on the SWID Bell Recharge Pipeline.

Table Number 2-5

Task 4. Environmental Documentation and Regulatory Compliance[1]

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)				
General Manager				$0.00
Total Estimated Cost				$0.00
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	35	HR	$9,275.00
Grade 5	$ 196.00	42	HR	$8,232.00
Grade 3	$ 148.00	68	HR	$10,064.00
Admin	$ 110.00	68	HR	$7,480.00
Total Estimated Cost				$35,051.00
Total Direct Costs				$35,051.00
Total InDirect Costs				
Total Task Cost				$35,051.00

[1] Engineering Consultant costs based on environmental costs expended on the SWID Bell Recharge Pipeline which included preparing environmental documentation in compliance with NEPA as well as results of the pre-activiy biological survey at the time of construction.

Table Number 2-6
Task 5. Permits and Approvals

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)				
General Manager	[redacted]			$3,048.60
Total Estimated Cost				$3,048.60
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	0	HR	$0.00
Grade 5	$ 196.00	0	HR	$0.00
Grade 3	$ 148.00	0	HR	$0.00
Admin	$ 110.00	0	HR	$0.00
Total Estimated Cost				$0.00
Other				
Dust Control Plan Fee[1]	$ 484.00	1	LS	$484.00
NPDES Fee[1]	$ 442.00	1	LS	$442.00
Cal Trans Permit (Hwy 43 Crossing)[2]	$ 1,476.00	1	LS	$1,476.00
City of Shafter Permit[3]	$ 1,066.00	1	LS	$1,066.00
Total Estimated Cost				$3,468.00
Total Direct Costs				$6,516.60
Total InDirect Costs				
Total Task Cost				$6,517.00

[1]Dust Control Plan and NPDES costs based on 2020 filing fees published on the regulatory agency's website.

[2]Caltrans permit cost is the minimum estimated deposit needed. Actual charges may vary. 6 hours each estimated for Review, inspection and field work.

Table Number 2-7
Task 6. Project Construction

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)				
General Manager				$0.00
Total Estimated Cost				$0.00
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	0	HR	$0.00
Grade 5	$ 196.00	0	HR	$0.00
Grade 3	$ 148.00	0	HR	$0.00
Admin	$ 110.00	0	HR	$0.00
Surveying[1]	$ 6,800.00	1	LS	$6,800.00
Construction Materials Testing[2]	$ 36,000.00	1	LS	$36,000.00
Conveyance Improvements and Construction				
Project Wide Items[3]	See Table 2-7a			$143,695.88
Pipeline and Improvements[4]	See Table 2-7b			$636,190.00
Total Estimated Cost				$822,685.88
Total Direct Costs				$822,685.88
Total InDirect Costs				$0.00
Total Task Cost				$822,686.00

[1] Estimate based on cost incurred for the surveying crew to go out and stake the alignment of SWID's recent Diltz Intertie pipeline project.

[2] Estimate based on compaction testing for backfill, including laboratory testing and sieve analysis, for a six month construction duration. Costs from Rosedale Rio-Bravo Water Storage District' s Central Intake Pipeline.

[3] Costs for Project Wide Items is based on SWID's Diltz Groundwater Recharge Intertie Pipeline and Semitropic Water Storage District's Cox Canal Intertie. See Table 2-7a for a breakdown of costs.

[4] Pipeline and conveyance improvement costs is based on costs from Rosedale Rio-Bravo Water Storage District's recently completed Central Intake Pipeline Project as well as Semitropic Water Storage District's XYZ System and Cox Canal Intertie Project. SWID's Diltz Project costs were referenced as well.

Table Number 2-7a

Project Wide Items					
Item No.	Description	Quantity	Unit	Unit Price	Cost
1	Mobilization	1	LS	77,000.59	$ 77,000.59
2	Demobilization	1	LS	38,500.29	$ 38,500.29
3	Develop and Provide Water Supply	1	LS	2,905.00	$ 2,905.00
4	Environmental Compliance	1	LS	2,700.00	$ 2,700.00
5	Prepare/Maintain/Restore Access Roads	1	LS	2,060.00	$ 2,060.00
6	Finish Grading of Project - Roads, Pipeline Alignment	1	LS	1,030.00	$ 1,030.00
7	Clearing and Grubbing for Pipeline Alignment	1	LS	7,000.00	$ 7,000.00
8	Traffic Controls	1	LS	12,500.00	$ 12,500.00
				Total:	$ 143,695.88

Table Number 2-7b

Cost Estimate for Conveyance Improvements for Farmer's Cooperative Recharge					
Item No.	Description	Quantity	Unit	Unit Price	Cost
1	Furnish and Install 24-in Pipe	1,600	LF	133.00	$ 212,800.00
2	Abandonment of Existng 15-in Pipe	1	EA	37,500.00	$ 37,500.00
3	Jack and Bore Crossing of HWY 43	1	LS	210,000.00	$ 210,000.00
4	Open Cut Road Crossing of Riverside Ave.	1	EA	13,020.00	$ 13,020.00
5	Lateral Turnout/Tie-in to Mainline	1	LS	57,500.00	$ 57,500.00
6	Connection to Existing Farm Turnout	2	EA	1,930.00	$ 3,860.00
7	Reconnection to Existing 15" Pipeline	1	EA	10,000.00	$ 10,000.00
8	14-in Outlet	1	EA	35,000.00	$ 35,000.00
9	Furnish and Install 36" x 36" x 24" tee	1	EA	14,100.00	$ 14,100.00
10	Furnish and Install 24" underground gate valve	1	EA	18,260.00	$ 18,260.00
11	Air valves	3	EA	7,000.00	$ 21,000.00
12	Furnish and Install District Marker Posts	5	EA	630.00	$ 3,150.00
				Total:	$ 636,190.00
			Estimated Project Total:		$ 779,885.88

Table Number 2-8

Task 7. Construction Management and Administration[1]

Item	Computation		Quantity Type	Total Cost
	Unit	Quantity		
Salaries and Wages(Including Fringe Benefits)[2]				
General Manager	[redacted]			$12,804.12
Total Estimated Cost				$12,804.12
Contractual				
Engineering Consultant				
Grade 7	$ 265.00	78	HR	$20,670.00
Grade 4	$ 166.00	248	HR	$41,168.00
Grade 3	$ 148.00	39	HR	$5,772.00
Total Estimated Cost				$67,610.00
Other				
Bid and Specs[3]	$ 531.00	3	EA	$1,593.00
Bid Advertisement[4]	$ 6,571.54	1	LS	$6,571.54
Total Estimated Cost				$8,164.54
Total Direct Costs				$88,578.66
Total InDirect Costs				
Total Task Cost				$88,579.00

[1] Total amount is in accordance with District and consulting engineer experience.

[2] Assumes time for District staff to attend weekly construction meetings for the seven-month construction duration and time to do monthly pay applications

[3] Bid Advertisement based on costs for a neighboring District to advertise project in local newspaper.

[4] Plans and Spec production based on costs for a neighboring district to print 3 copies of their plans and specs.

Table Number 2-9a
2019 District Fee Schedule

Job Classification	Base Hourly Rate	Fringe Benefits	Burdened Hourly Rate
Salaries and Wages			
General Manager	[redacted]		
District Administrator			

Table Number 2-9b
2020 GEI Consultants Fee Schedule

Job Classification	Hourly Rate
Salaries and Wages	
Engineering Consultant	
Grade 7	$ 265.00
Grade 5	$ 196.00
Grade 3	$ 148.00
Admin	$ 110.00

3. Environmental and Cultural Resources Compliance

The following section summarizes the District's approach to avoid, minimize, and mitigate any potential environmental impacts related to construction of the proposed Project. The Project will be constructed in compliance with California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements.

Pursuant to its responsibilities under CEQA, the District prepared and adopted an Initial Study/Mitigated Negative Declaration and Addendum for the Shafter-Wasco Irrigation District Recharge Project, which evaluated the impacts of a program of 60 twenty-acre recharge basins (and related facilities and appurtenances) throughout the District, including the Kimberlina Basin Recharge Project. Reclamation also completed a NEPA document in 2016 that covers the scope of the proposed Project. The Environmental Assessment (EA), entitled "Shafter-Wasco Irrigation District Kimberlina Groundwater Recharge Basin and Banking Project," concluded by signing a Finding of No Significant Impact, FONSI-16-06-SJRRP. The scope of the Project in the 2016 EA included the construction of three wells for added recovery capacity, in addition to constructing other facilities to connect sources of supply with groundwater storage capacity. The EA was prepared for receiving Reclamation grant funding for the San Joaquin River Restoration Program of 2013 (SJRRP). The SJRRP Project was awarded in 2013 but required various modifications with the District Reclamation to finalize the Project. After final decision of a Project was made between the parties, a time constraint placed by the agreement limited project activities to only the completion of the spreading component, leaving the recovery and return components (e.g., drilling, equipping, and plumbing wells) to yet be constructed.

The District hopes to receive approval from reclamation to use the 2016 EA for the current grant application. It is anticipated that the Project description of the proposed Project will be reviewed by Reclamation to determine the level of NEPA environmental documentation that may remain prior to commencement of construction activity.

Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? The extent (footprint) of the Project is relatively small and located exclusively within the recently completed Kimberlina Spreading Grounds (operational in 2017) which prior to construction had completed a Natural Environmental Study report in June 2016. All the proposed work is on actively disturbed land owned by the District.

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? The District is aware that threatened and endangered species exist in the Southern San Joaquin Valley. Typically, endangered species habitat is not found within these highly cultivated areas. Natural vegetation is limited to ruderal, non-native grasses and forbs at the Project site. However, certain species are known to exist around the edges of fields. Based on experience and the Kern Council of

Governments Habitat Conservation Map and federally-listed species mapping, and review of the FWS Endangered Species Database and California Natural Diversity Database, the only sensitive species with native habitats near the Project are the San Joaquin kit fox (protected under the Endangered Species Act), the blunt-nosed leopard lizard, the Tipton kangaroo rat, and the giant kangaroo rat. As part of the environmental work, the District will retain a certified biologist to conduct a biological reconnaissance survey and prepare a report to evaluate potential impacts to biological resources within the Project site. It is expected that none will be encountered since the Project site is in an actively disturbed area. However, if potential impacts are identified, the District will follow recommendations by the biologist to reduce those impacts to a less than significant level.

Prior to construction of the Kimberlina Spreading Grounds where the wells are located within, studies were completed on the area within a 2-mile radius. General biological surveys were completed with a focus on the San Joaquin kit fox, botanical surveys and California burrowing owl (complete list of animals within study) conducted by a qualified Bighorn Consulting, INC. biologist from December 2015 to January 2016. No protocol level survey was completed at that time, but reconnaissance-level surveys were performed. The surveys resulted in no CNDDB occurrences within the 2-mile area, or special status plants within the Project area (Natural Environmental Report, 2016). Reclamation had received concurrence from the U.S. Fish and Wildlife Service on its determination that the proposed action was not likely to adversely affect San Joaquin kit fox.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" 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? The District has been receiving water from the CVP since 1957. CVP water enters the district from two turnouts off the FKC. The Kimberlina Spreading Grounds became operational in 2017. The proposed Project will not alter any existing features of an irrigation system but will tie into the District's distribution mainline.

The previous EA and FONSI identified the installation of wells within the Facility capable of recovering a portion of recharged groundwater. They noted that the wells will not be operated to remove more water than has been recharged, coupled with the leave-behind component with the banking partner, therefore the Project is anticipated to have beneficial effects on the system.

Will the 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. The Project will not involve major modifications to the District's existing distribution system. The only changes would be to replace the existing 15-inch lateral with a 24-inch PVC pipe, construct of a new District turnout, and install a 14-inch outlet to the spreading grounds, before reconnecting to the existing 24-inch pipe.

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. Reclamation previously consulted with the California State Historic Preservation Officer in June 2016, regarding the Facility, as part of the preparation of the EA and they have concurred that the proposed Project in this area will not affect historic properties pursuant to 36 CFS Part 800.3(a)(1). If Reclamation deems necessary, the District will retain a private cultural resources management consultant or arrange for Reclamation staff to again carry out a consultation to evaluate if any buildings or structures are eligible under the National Register of Historic Places. The expectation is that none will be identified since the Project improvements will be constructed in actively disturbed agricultural lands.

Are there any known archeological sites in the proposed project area? A cultural resources survey was completed as part of the 2016 EA for the Facility of which, the proposed Project is a part of. Reclamation concluded that the proposed Project would have no effect on historic properties pursuant to 36 CFS Part 800.3(a)(1). The proposed Project work is for wells on the same constructed facilities covered in the FONSI-16-06-SJRRP. As part of Reclamation's EA for the construction of the Facility and determination of FONSI, Reclamation entered consultation with SHPO requesting concurrence on Reclamation's finding that no historic properties would be affected by the proposed undertaking of the Facility. SHPO concurred in a letter dated June 17, 2016. There will be no significant impacts to cultural resources from the Proposed Action.

If Reclamation deems necessary, the District will work with Reclamation cultural resources staff to obtain clearance for archaeological sites within the Project area. The District will retain a private cultural resources management consultant or arrange for Reclamation staff to carry out a consultation to conduct a Phase I intensive pedestrian cultural resource survey, and a cultural resources records search and Native American consultation to evaluate any impacts to cultural sites. Impacts to cultural resources are not expected. Nevertheless, the District is prepared to implement any necessary mitigation measures should cultural resources be identified for any component of the Project.

Will the project have a disproportionately high and adverse effect on low income or minority populations? Construction of the Project will support the important agricultural-based economy in the Southern San Joaquin Valley and should have only positive impacts on low income or minority persons living in the region.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts or tribal lands? The Project will not limit access to or ceremonial use of Native American sacred sites or tribal lands.

Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area? The Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species in the region.

4. Required Permits or Approvals

It is anticipated that no regulatory permits will be required, since the work will be performed on previously and actively disturbed District land. In this regard, only permits related to construction may be required and application will be made for these permits immediately prior to construction commencing.

Below are three permits the District expects to need prior to construction commencing:

1. **National Pollutant Discharge Elimination System (NPDES) Permit –** Application will be made to the State Water Resource Control Board for an NPDES permit related to storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling). A Notice of Intent (NOI) will be submitted certifying that all permit eligibility conditions have been met. As part of the preparation of an NOI, a State Water Pollution Prevention Plan (SWPPP) will be developed and implemented during construction of the Project. The SWPPP will spell out Best Management Practices to prevent waste and pollutants from flowing to surface water and groundwater. This permit will be obtained immediately prior to construction.

2. **PM-10 Dust Control Permit –** Application will be made to the San Joaquin Valley Air Pollution Control Board for a PM-10 Dust Management Plan permit. This permit will require that a dust control management plan be prepared and implemented during construction to prevent air pollution.

3. **State of California Department of Transportation (CalTrans) Encroachment Permit** – Application will be made to the state of California's Department of Transportation for an encroachment permit to do a jack and bore road crossing of HWY 43. This permit will require a review of the plan and inspection of the site by the Department of Transportation. This permit will be obtained prior to construction.

An evaluation will be made by District's legal counsel regarding whether construction of the Project components will require any additional permits. It is noted that the District is not subject to the County's jurisdiction regarding building and grading permits. The District will comply with all necessary environmental regulations before commencing any ground disturbing activities. This includes a pre-activity survey conducted by a qualified biologist prior to the start of construction. There are no expected impacts related to endangered or threatened species in the District's service area or facilities as the Project's alignment is confined to a highly trafficked road.

5. Existing Drought Contingency Plan

As previously mentioned in Section 1.6.2, SWID has entered into an agreement with Reclamation to develop a DCP for the Poso Creek Region. This DCP effort will focus on past drought planning efforts that were conducted under SGMA and IRWM planning. For further details on drought planning related to SWID, reference the Drought Plan Memo in Appendix B.

SWID is an active member and stakeholder of the Poso Creek IRWM Group. In 2019, the Group updated their published IRWM Plan Update. The IRWM Plan assesses the regions vulnerability and the long-term effects of drought. The 2019 Plan Update recognized the that as droughts become more frequent, intense wet periods are plausible as a result of climate change. A DCP will be developed based and included as an appendix to the 2019 IRWM Plan Update.

6. Official Board Resolution

REOLUTION OF THE BOARD OF DIRECTORS OF THE SHAFTER-WASCO IRRIGATION DISTRICT

IN THE MATTER OF: **RESOLUTION 20-08**

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SHAFTER-WASCO IRRIGATION DISTRICT IN SUPPORT OF FILING AN APPLICATION WITH THE BUREAU OF RECLAMATION FOR A GRANT UNDER WATERSMART DROUGHT RESILIENCY PROJECTS (FY 2021)

WHEREAS, the Shafter-Wasco Irrigation District (District or Applicant) partnered with several neighboring water districts and formulated the Poso Creek Integrated Regional Water Management Plan (Plan), adopted in 2007, and updated in 2014 and 2019 by each of the districts for their collective area; and

WHEREAS, the Plan identified improving water reliability as a regional priority, expanding supplemental surface water delivery systems, the in-lieu and direct recharge facilities, well extraction and recovery capacity, and projects that regulate water supplies available to the District; and

WHEREAS, varying yearly water supplies in the Friant-Kern Canal have rendered the District's CVP water less reliable, creating an additional need to regulate supplies when they are available; and

WHEREAS, the District's regulating capabilities can be enhanced through improvements to the surface water delivery system which would allow the District additional water conveyance capacity to their groundwater recharge facility.

WHEREAS, the United States Bureau of Reclamation is currently soliciting proposals for grant funding assistance under their *WATERSMART DROUGHT RESPONSE PROGRAM FY 2021 (*Funding Opportunity No. BOR-DO-20-F002); and

WHEREAS, District Staff has formulated a grant proposal for operational flexibility and efficiency to deliver additional surface water to a groundwater recharge site when made available, referred to as the *CONVEYANCE IMPROVEMENTS FOR FARMERS COOPERATIVE RECHARGE.*

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE SHAFTER-WASCO IRRIGATION DISTRICT does hereby resolve, declare and order as follows:

a. The District's Board of Directors or has reviewed and supports the submission of a grant application to Reclamation entitled "Conveyance Improvements for Farmers Cooperate Recharge";

b. The District's General Manager, Dana Munn, or his designee, is directed to submit the grant application and is authorized to enter into an agreement with Reclamation on behalf of Shafter-Wasco Irrigation District for grant funding under Reclamation's *WATERSMART DROUGHT RESILIENCY PROJECTS (FY 2021)*;
c. The Applicant is capable of providing the amount of funding and in-kind contributions specified in the application; and
d. The Applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

ALL THE FOREGOING, being on a motion of Director Geordy W. Wise and seconded by Director Benjamin P. Wilson, was authorized by the following vote:

AYES:Craig Fulwyler, Geordy W. Wise, D. Mark Franz, Jeff Mehlberg and Benjamin P. Wilson

NOES: None
ABSENT: None
ABSTAIN: None

I HEREBY CERTIFY that the foregoing is the resolution of said District as duly passed and adopted by said Board of Directors on this 10th day of June 2020.

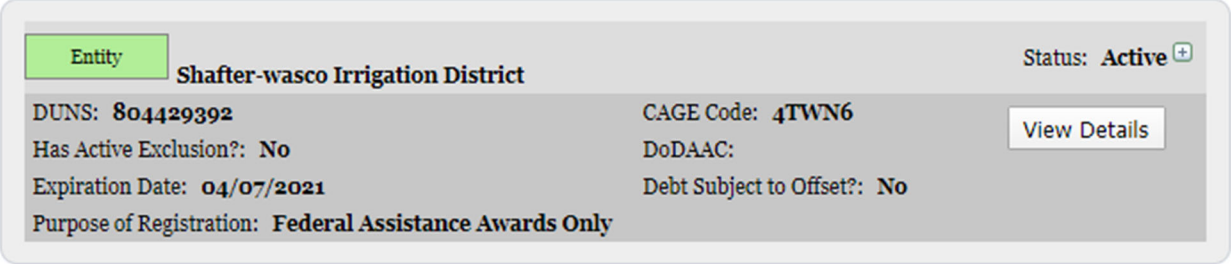
WITNESS my hand and official seal of said Board of Directors on this 10th day of June, 2020.

Secretary of the Board of Directors

7. System of Award Management (SAM) and ASAP Registration

The District has provided a screenshot of their System of Award Management (SAM) account below to verify that the account is open and active.

Additionally, the District maintains an open and active Automated System Application for Payment (ASAP) account.



APPENDIX – A Letter of Support

POSO CREEK IRWMP
Management Group

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

June 4, 2020

Mr. Dana Munn
General Manager
Shafter-Wasco Irrigation District
16294 Central Valley Hwy,
Wasco, CA 93280

Re: Proposed Project – *Conveyance Improvements for Farmers Cooperative Recharge*

Dear Mr. Munn,

On behalf of the Poso Creek Integrated Regional Water Management (IRWM) Group, I express support of Shafter-Wasco Irrigation District's (SWID) *Conveyance Improvements for Farmers Cooperative Recharge* project and their efforts to build drought resiliency through expansion of the District's groundwater recharge capabilities.

The Poso Creek IRWM Group is interested in and supportive of the *Conveyance Improvements for Farmers Cooperative Recharge* project, as it will help bring additional water supplies when available, to be banked via groundwater recharge. This effort will help improve operational flexibility and increase water supply reliability in years of drought. Additionally, the project will allow for more flexible timing of CVP deliveries from the Friant-Kern Canal, improving operational flexibility in the region.

This Project is an important improvement in the Poso Creek Region and further supports drought resiliency and groundwater sustainability by providing additional conveyance capacity for groundwater banking. 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,

Ram Venkatesan
Vice Chairman, Poso Creek IRWM Group
ram@northkernwsd.com
(661) 393-2696

APPENDIX – B Drought Contingency Plan Memo

Shafter-Wasco Irrigation District
Drought Contingency Planning and Mitigation Actions

Introduction

The purpose of this memorandum is to provide drought planning details specific to Shafter-Wasco Irrigation District (SWID or Shafter-Wasco) as an appendix to the Drought Contingency Plan (Poso Region, DCP, or Plan) for the Poso Creek Integrated Regional Water Management (IRWM) Group Task Force, of which Shafter-Wasco is a member with several other Water Districts listed below. Most notably, this memorandum presents the local mitigation actions to build long-term resiliency to drought in Shafter-Wasco and response actions for short-term needs related to drought. The Poso Region DCP workplan is awaiting approval from the United States Bureau of Reclamation (USBR), and therefore, some contents herein are subject to change as drought planning in the region is further developed.

The IRWM Group has entered into an agreement, with the USBR to receive funding to develop the Poso Region DCP through the USBR WaterSMART Drought Response Program (USBR, 2016). The Plan is a collaborative effort that will include a task force made up of regional stakeholders, interested parties, and the governing members of the IRWM Group. The governing members of the IRWM Group are: Semitropic Water Storage District (SWSD), North Kern Water Storage District (NKWSD), Cawelo Water District (CWD), SWID, Kern-Tulare Water District (KTWD), Delano-Earlimart Irrigation District (DEID), North West Kern Resource Conservation District (NWKRCD), and Southern San Joaquin Municipal Utility District (SSJMUD). The Poso Region DCP Task Force (Task Force) is made up of the governing members of the IRWM Group as well as regional stakeholders and interested parties has been established.

Droughts are common throughout the Western United States, and on average California experiences a drought every 7 years. The last drought to impact the Kern River watershed, from 2012-2016, was the driest on record since data have been tracked. As identified in the 2019 Poso Creek IRWM Plan Update (IRWM Plan), droughts are expected to become more frequent and intense, interspersed with severe wet periods as a result of climate change. The Poso Region DCP and this memorandum are intended to assist local governments and agencies by: (1) developing and updating comprehensive drought plans, (2) developing and refining projects that will build long-term resiliency to drought, and (3) establishing emergency response actions. This will be accomplished by identifying and implementing strategies that monitor short and long-term water availability, assess risks to critical resources in the case of drought, promote mitigation efforts, prioritize drought response actions, ensure administrative framework and associated responsibilities are clear and transparent, and provide for periodic evaluation and updating of the Plan.

Shafter-Wasco Planning Area

Agency's Name:	Shafter-Wasco Irrigation District
Agency's Address:	16294 Central Valley Hwy, Wasco, CA 93280
Agency's Phone Number:	(661) 758-5153
Agency's Website:	http://www.swid.org/
Contact Person:	Dana Munn
Contact Person's Title:	General Manager, SWID

SWID is situated in the San Joaquin Valley portion of Kern County and encompasses about 39,000 acres with an irrigated acreage of about 30,000 acres. SWID consists mainly of deciduous fruits and nut crops. Additionally, field crops, pasture, and grain and hay crops are located throughout the district, but a large concentration of these crops can be found centered around the boundary between the cities of Shafter and Wasco.

SWID was formed in 1937. The USBR provided a Factual Report for SWID in 1953, which identified groundwater supplies available to SWID and proposed surface water supplies to balance water demands within SWID. SWID adopted its Project with USBR in 1955 to receive water from the Central Valley Project's Friant-Kern Canal (FKC) based on the 1953 Factual Report. In 2019, the 7th Standard Annex was formed in order to allow for landowners outside of SWID's boundaries to comply with the California Sustainable Groundwater Management Act ("SGMA"). The lands within the annex are considered part of a SGMA Management Area, for the administration of the Kern Groundwater Authority's Groundwater Sustainability Plan ("KGA GSP"). The Annex Area includes approximately 10,000 acres south of the SWID boundary with 8,000 acres of irrigated acreage. Land use includes permanent crops, row and field crops, and dairies. The Annex Area relies on groundwater and treated effluent from the North of River Sanitary District (NORSD) wastewater treatment plant for water supplies.

SWID has worked with adjacent water agencies to enhance regional conjunctive water use of imported water supplies. When Central Valley Project (CVP) or State Water Project (SWP) surplus surface water supplies have been available to neighboring contractors in excess of their current demand, SWID has diverted and delivered such water within its service area for groundwater recharge through direct and/or in-lieu means via banking and exchange arrangements.

Participation in the Poso Region DCP Task Force

Shafter-Wasco is a member of the Poso Region DCP interim Task Force. The Task Force developed a workplan for the Poso Region DCP and will communicate and provide outreach to stakeholders and the public through the planning process.

In addition to the Task Force, Shafter-Wasco has been an active member of the IRWM Group since its formation in 2005, bringing an important mix of assets to the group's planning and implementation efforts, which include conservation storage space in Isabella Reservoir; significant

main conveyance facilities; access to FKC; and very significant and effective water spreading facilities.

District Communication and Outreach

Shafter-Wasco involves its stakeholders and the public in drought contingency planning through the following approaches:

- Public notices and postings of meetings and agendas on the District website,
- Public Stakeholder workshops, meetings and open house,
- Public Board of Director's meetings (held monthly),
- Publicly-noticed landowner meetings (when necessary),
- Annex Area Agricultural Landowner Committee meetings,
- Distribution and collection of a stakeholder survey,
- Outreach to key major water users in the Management Area, and
- Email and Postal Service mailers to landowners.

Shafter-Wasco will use the outlets above to communicate the further development of drought planning to the public. These outlets are also used to solicit input and feedback from the public so that all interested parties are involved in the planning process.

Communication and Outreach Schedule

Communication and outreach are ongoing for drought contingency planning. Many elements of the Poso Region DCP are concurrent and collaborative with sustainable water management planning (KGA, 2019) and the IRWM Plan (RWMG, 2019). The Task Force for the Poso Region DCP submitted a workplan to USBR in April 2020; and after approval of the workplan, expect to begin development of the Poso Region DCP by Fall 2020.

Drought Response Program Framework

The District has developed this memorandum using the drought response program framework (USBR, 2016). The framework includes monitoring for drought, evaluating risks and impacts of drought on vulnerabilities, identifying and planning for long-term mitigating actions and activities, and identifying and prioritizing short-term response actions to drought.

The following are the six elements of the drought response framework.

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 Task Force is developing the evaluations and actions to address regional monitoring, vulnerability assessments, response actions, the operational and administrative framework, and the plan to monitor, evaluate, and update the DCP. This memorandum focuses on specific local mitigation actions planned by SWID.

Drought Monitoring

Drought monitoring is discussed in the context of the regional group, in the Poso Region DCP area.

The objective is to provide timely information in advance of, or during, the early onset of drought to prompt action (via action levels or threshold triggers) within a drought contingency plan.

The following parameters are monitored as a part of drought planning:

- Local precipitation and temperature,
- Stream Flows,
- Snowpack,
- Reservoir levels,
- Groundwater levels (groundwater elevation or depths),
- Projected allocations for imported water, and
- Local evapotranspiration (ET)

Monitoring Systems

There are various local and state entities that monitor several hydrologic and meteorological conditions. These parameters may be linked to a local regional monitoring dashboard in the future. In the interim, the National Integrated Drought Information System (NIDIS) and the National Drought Mitigation Center (NDMS) provide national-level dashboards with drought indices to inform stakeholders on drought monitoring conditions at a high-level.

At a national level, the NIDIS is a first step in monitoring multistate to state-level conditions. NIDIS was created by Congress to work toward a comprehensive, interagency approach for drought monitoring, forecasting, and early warning planning and preparedness. NIDIS works closely with the NDMS to provide drought-related web resources for monitoring, mitigation, and planning.

The following resources, which include multi-state dashboards, cover the parameters in this plan for adequate drought monitoring:

- Multi State dashboards with monitoring, maps, current conditions, and outlooks:
  - NIDIS. https://www.drought.gov/drought/states/california, and
  - NDMS. https://droughtmonitor.unl.edu
- Drought early warning systems: https://www.drought.gov/drought/dews/california-nevada (NIDIS)
- California Irrigation Management Information System (CIMIS) weather stations:
  - https://cimis.water.ca.gov/Stations.aspx
  - http://cdec.water.ca.gov/cdecstation2/
- Snowpack and water conditions surveys:
  - California Department of Water Resources (DWR) Bulletin 120. Water Conditions in California. http://cdec.water.ca.gov/snow/bulletin120/
  - USDA-NRCS https://www.wcc.nrcs.usda.gov/snow/snow_map.html
  - California Data Exchange Center:
    - http://cdec.water.ca.gov/snow/current/snow/
    - http://cdec.water.ca.gov/snow/current/snow/pillowplots/Kern.html
  - NOAA California Nevada River Forecast Center (CNRFC)
    - https://www.cnrfc.noaa.gov/snowmelt.php
- Isabella Reservoir Storage and Kern River Stream Flows:
  - http://www.spk-wc.usace.army.mil/fcgi-bin/hourly.py?report=isb
  - Kern River Flow Data. http://cdec.water.ca.gov/cdecstation2/
- SWP Allocations. https://water.ca.gov/Programs/State-Water-Project/Management/SWP-Water-Contractors
- CVP Allocations. https://www.usbr.gov/mp/cvp-water/allocations.html
- Groundwater Levels:
  - Groundwater level monitoring within the District at representative monitoring wells.
  - CASGEM. https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM
  - DWR Water Data Library. http://wdl.water.ca.gov/waterdatalibrary/
  - USGS NWIS. https://nwis.waterdata.usgs.gov/usa/nwis/gwlevels
- District Evapotranspiration Calibrated Remote Sensing Analysis (future planned).

Metrics and Action Levels

Based on drought monitoring, metrics and action levels can be established to define a specific drought stage, response, or a mitigation action. Poso Creek IRWM uses action levels to define agency-specific or regional response actions. A brief description is described in the following subsection.

Metrics for Local Response Actions

The metrics that are critical for local and regional water management and drought response actions are:

1. decreases in surface water allocations, and
2. decreases in groundwater levels.

Drought response actions may be triggered as the sustainable yield of the District is exceeded. The sustainable yield is primarily governed by and varies with imported surface water allocations. It is described in the KGA GSP (2019), as the sum of all surface water into the District plus native yield of groundwater available for pumping, and precipitation, that equal water demand and loss. The parameters that are monitored or estimated for sustainable yield are:

- surface water supplies (natural and imported),
- local precipitation,
- groundwater pumping and underflow (if estimated), and
- local evapotranspiration

Groundwater management response actions are required as groundwater elevations drop below measurable objectives (MO) and minimum thresholds (MT) for groundwater. These action levels (MOs and MTs) were adopted by the District in the GSP (KGA, 2019).

Indices Used to Inform Stages of Drought and Hydrologic Year Type

Directly related to metrics that define response actions, are indices that now only characterize the current state of hydrologic conditions and potential drought, but also inform the decision at a state and regional level for surface water allocations of the CVP, SWP, and Kern River.

The Water Year Hydrologic Classification Index (Water Year Index) is used throughout much of California and the Poso Region DCP area to characterize hydrologic conditions that immediately affect water supplies of stakeholders and the public. This index includes the qualitative labeling of a drought as dry or critically dry. While these qualitative labels are used in communicating with the general public, they are determined by quantitative ranges. The Water Year Index is based on the unimpaired runoff predictions in DWR's Bulletin 120 which is published in February to May of each year and compares runoff forecasts in major watersheds (including the Kern River watershed) to historical averages. DWR incorporates precipitation and snow water

content to forecast runoff, which is a key index in how allocations of imported water from the CVP, SWP, and the Kern River are estimated. These forecasts and allocations determine what actions must be taken by water entities to manage a deficit in years of drought (or, conversely, a surplus in "wet" years).

Shafter-Wasco primarily uses the following indices or values to manage conjunctive water use or actions in response to drought conditions:

- Water Year Index,
- Bulletin 120 forecasted runoff, and
- Allocation estimates of surface water entitlement.

In addition to the state and regional indices described above, NDMC's United States Drought Monitor includes the following indices which are used in the state and national dashboards characterizing drought conditions (these are also described in the Handbook of Drought Indicators and Indices, [Svoboda and Fuchs, 2016]):

- Drought Severity Classification Index (DSCI)
- Standardized precipitation index (SPI),
- Palmer Hydrological Drought Severity Index (PHDI),
- Standardized Water-level Index (SWI),
- Surface Water Supply Index (SWSI).

Vulnerability Assessment

Vulnerabilities are features of the water system that are susceptible to droughts, climate change, and other uncontrollable factors, resulting in the district not being able to meet water supply demands. Vulnerabilities identified through this process form the basis for developing mitigation and response actions. The vulnerability assessment is also based on a range of potential future conditions, including consideration of the effects of climate change.

This assessment of vulnerabilities applicable to SWID and adjacent neighbors supplements the assessment developed in the GSP (KGA, 2019) and IRWM Plan Update (Poso Creek RWMG, 2019).

The Assessment was performed by:

1. Reviewing vulnerability information from the following plans: GSP, IRWM Plan Update, Urban Water Management Plans (UWMPs), and water budget from the UWMP and GSP;
2. Listing vulnerabilities;
3. Evaluating vulnerabilities in terms of sensitivity to drought and consequences of potential effects *(PENDING)*; and

4. Categorizing vulnerabilities based on local or external factors and institutional, operational, or physical factors *(PENDING)*.

This assessment identifies the major vulnerabilities as defined in regional water plans and evaluates which vulnerabilities are most sensitive with the highest consequences, while considering whether local or external factors are the primary drivers. In addition, the assessment identifies if the factors are institutional, operational, or physical.

The evaluation of sensitivities, consequences, local and external factors and factor type is in development and will be completed along with the Poso Region DCP.

Vulnerability Results

The following vulnerabilities have been identified in the IRWM Plan (RWMG, 2019) and the GSP (KGA, 2019) as a part of climate change impact assessments:

- Potential reduction in imported surface water supplies (SWP and CVP) and surplus deliveries,
- Low storage in Lake Isabella Reservoir and increase in variability,
- Decrease in groundwater elevations leading to increased pumping costs and well impacts,
- Municipalities that rely solely on groundwater,
- Permanent crops which may be climate-sensitive and that limit water use curtailment measures, and
- Wildlife such as San Joaquin Kit Fox, Tipton Kangaroo Rat, and San Joaquin Wooly Threads.

Sensitivity and Consequence Analysis

An analysis of the sensitivity and consequence of vulnerabilities is in development and will be completed with the Poso IRWM DCP.

External and Local Factors

An analysis of the external and local factors of vulnerabilities is in development and will be completed with the Poso IRWM DCP.

These factors will further inform the plan for mitigation and response actions. Even though some factors may be external, either institutional, operational, or physical, there are mitigation actions as a local level that can be implemented to partially address external factors. For example, reduction in imported surface water supplies and CVP water supplies and storage in reservoirs are external to the District; however, enhanced effectiveness in conveyance and expansion of recharge and recovery capabilities allow the District to store more surplus water when available to enhance the conjunctive use capabilities of the District in years when surface water supplies are deficient.

Mitigation Actions

Mitigation actions developed by SWID are intended to build long-term resiliency to drought, and mitigate risks posed by drought. The actions will address risk associated with the following local and regional vulnerabilities to drought identified as part of the vulnerability assessment process.

Vulnerabilities to be addressed by mitigation actions:

- Variable Lake Isabella reservoir storage
- Groundwater pumping costs and well impacts
- Municipalities that rely solely on groundwater
- Allocation reductions in CVP and SWP due to hydrologic variability or institutional constraints

Development and Benefits of Mitigation Actions

Mitigation actions are intended to decrease sector vulnerabilities and reduce the need for response actions to help water managers build resiliency and avoid crisis during drought.

The actions are benefits developed to support the following drought plan objectives:

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

Plans and ideas for mitigation actions are developed by the District and shared with the Task Force for consideration and coordination with the regional group.

The following table provides the actions developed by the District, with a brief description and summary of benefits that address drought planning objectives.

Table on Following Page

Mitigation Actions	Type	Purpose and Brief Description	Benefits to Drought Planning Objectives
Diltz Intertie Lateral Piping and WMI	Project	Modify Water Conveyance Systems Connection of the Diltz Intertie mainline to serve 380 acres of irrigated land with surface water.	• Improve water delivery effectiveness • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Bell Recharge Project	Project	Conveyance improvements Conveyance improvements to SWID's existing distribution system that will allow CVP water to be delivered from the FKC for recharge.	• Improve regional water conveyance • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Kimberlina Recharge Project	Project	Recharge & Recovery Facility Construction of a 285-acre recharge site for CVP surface water.	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Leonard Avenue Conveyance Improvement Project	Project	Conveyance Improvements Construction of pipeline to connect SWID's existing system to Semitropic to provide operational flexibility to absorb delivered surface water	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions

Mitigation Actions	Type	Purpose and Brief Description	Benefits to Drought Planning Objectives
Improved Water Level Measurement of District Recharge Facility	Program	Construction of and conversion to two monitoring wells to better manage and collect information on groundwater levels for district recharge facility.	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Implement regional opportunities, projects, and programs • Implement region-wide water management actions
"Surface Water First" Incentive Program	Program	Implementation of fees for groundwater use when surface water is available.	• Implement regional opportunities, projects, and programs • Implement region-wide water management actions
On-Farm Efficiency/Deficit Irrigation Practices Incentive Program	Program	Improvements to individual farming operations that address water use efficiency and/or groundwater protection through incentive programs.	• Implement regional opportunities, projects, and programs • Implement region-wide water management actions
Conveyance Improvements for Farmers Cooperative Recharge	Project	Construction of 1,600 LF of 24-inch pipeline for increased conveyance capacity for recharge activities	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
On-Farm Recharge Activities Incentive Program	Program	Development of an incentive program to encourage landowners to take delivery of available water to facilitate further groundwater recharge.	• Implement regional opportunities, projects, and programs • Implement region-wide water management actions
Subsurface Recharge Feasibility Study	Program	Implementation of a program which would supply water to landowners for use in subsurface recharge practices.	• Improve in-lieu service areas • Enhance regional conjunctive water-use • Implement regional opportunities, projects, and programs • Implement region-wide water management actions

Mitigation Actions	Type	Purpose and Brief Description	Benefits to Drought Planning Objectives
Evaluation of Potential to Utilize SWID Kimberlina Ponds or Other Facilities for Recharge	Project	Evaluation of opportunities to purchase non-SWID water for recharge in the Kimberlina Ponds facilities, when Ponds have unused capacity (typically non-wet and non-drought years).	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Evaluation of Potential to Partner in Kern Fan Groundwater Storage Project	Project	Development of a regional water bank in the Kern Fan to capture and storage Article 21 water via SWP when surface water is abundant.	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions • Increase absorptive capacity for banking water when available
7th Standard Annex Management Area Storage Pond Project	Project	Development of a groundwater recharge facility to effectively conveyance surface water supplies when they are available, facilitation of water banking and exchange, and avoidance of direct water quality impacts.	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Identify Opportunities to Utilize existing Infrastructure	Project	Evaluation of potential opportunities for recharge with existing groundwater recharge infrastructure that have unused capacity partially in non-wet years.	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs

Mitigation Actions	Type	Purpose and Brief Description	Benefits to Drought Planning Objectives
			• Facilitate implementation of region-wide water management actions
On-Farm Groundwater Recharge	Project	Implementation of a new Buried Recharge policy allows landowners to purchase and recharge non-SWID water on their own properties for on-farm banking.	• Implement regional opportunities, projects, and programs • Implement region-wide water management actions
Flat Rock Canal Extension	Project	Development of connection from the Annex Area to the Kern Water Bank Canal, Cross Valley Canal, and Goose Lake Slough for water distribution.	• Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use • Maintain and enhance quality of water supply • Facilitate implementation of regional opportunities, projects, and programs • Facilitate implementation of region-wide water management actions
Develop New Interconnections Within SWID's Conveyance System and Improve "Bottleneck" Issues	Project	Increase the capacity and flexibility of SWID's current conveyance system to allow access to additional supplies.	• Enhance reliability and effectiveness of surface water supplies delivered to Region • Improve regional water conveyance, direct recharge, and in-lieu service areas • Enhance regional conjunctive water-use
Increased Recycled Water Deliveries and Recharge	Project	Increase recycled water deliveries and recharge of groundwater with secondary-treated wastewater within the Annex Area	• Maintain and enhance quality of water supply • Improve regional water conveyance, direct recharge, and in-lieu service actions • Enhance regional conjunctive water-use • Facilitate implementation of region-wide water management actions • Adapt to changes in the amount, intensity, timing, and in-lieu service areas

Response Actions

Regional response actions are discussed in the Poso Region DCP. Response actions include those that can be quickly implemented during specific stages of a drought; manage the limited supply of water; and decrease the severity of immediate impacts.

As described in the drought monitoring section, the indices that inform Shafter-Wasco decision making are the Water Year Index, forecasted runoffs, and estimated allocations of surface supplies. As Shafter-Wasco gathers these data, water supplies can be managed through conjunctive use within the district boundaries.

Shafter-Wasco has the following response actions available if drought conditions lead to below normal surface water supplies:

- Public education and outreach through website, public meetings, and email and postal service mailing for voluntary conservation and water use reduction;
- Prorating of water deliveries until they become available;
- Implementing a Well Mitigation Program; and
- Participation in additional water transfers or supplemental surface water programs.

Additional actions applicable to SWID will be included with this memorandum as further development occurs. The details of the following short-action is in development: request disaster relief.

Operational and Administrative Framework

The regional framework for operational and administrative actions, planning, and procedures of drought planning are discussed in the Poso Region DCP. This framework facilitates a quick and efficient response to drought conditions by clarifying the roles and responsibilities of the Task Force members and stakeholders in the Poso Region DCP area.

SWID will, at a minimum, report on local actions or local data that are necessary for monitoring and reporting, mitigation, and drought response. The following are roles of SWID within the drought planning Task Force:

- Disseminate information from the Task Force and drought planning team to the stakeholders within the District, including monitoring stage information, progress of mitigation projects, response actions, and status of drought planning and updates;
- Evaluate progress of mitigation projects within SWID and provide periodic reviews to the Task Force; and
- When necessary, initiate response actions within SWID.

Plan Update Process

The Task Force will initiate the update process for the DCP. As data are collected and evaluated, changes in conditions or improvements to the DCP that require updates may be identified. Updates will also incorporate new regulations, stakeholder information, data, and technologies. These changes will be made every five years or as determined by the Task Force.

Details on updates to drought planning are included in the Poso Region DCP.

References

Kern Groundwater Authority (KGA). 2019. Groundwater Sustainability Plan. Public Draft. August.

Poso Creek Regional Water Management Group (RWMG). 2019. 2019 Poso Creek Integrated Regional Water Management (IRWM) Plan Update. August.

Svoboda, Mark; Fuchs, Brian; and Integrated Drought Management Program (IDMP), Handbook of Drought Indicators and Indices (2016). Drought Mitigation Center Faculty Publications. 117.

U.S. Department of the Interior Bureau of Reclamation (USBR). 2016. Drought Response Program Framework: WaterSMART Program. April.

APPENDIX – C Construction Cost Estimates

LANDMARK
SURVEYING & ENGINEERING
GEOMATICS • GPS • GIS • MAPPING

11/17/2019

Joseph M. Roberts
GEI Consultants, Inc.
99 S. Lake Avenue, Suite 300
Pasadena, CA 91101

Subject: **SWID 19-02 – Construction Staking**
Semitropic Water Storage and Shafter-Wasco
Irrigation District Groundwater Recharge Intertie

Pursuant to your email, Landmark Surveying & Engineering offers the following cost estimate for construction staking the proposed water irrigation pipeline Intertie Line and the Distribution Laterals per plans and specifications provided on 11/15/2019 by GEI near Wasco, Ca. A cost estimate is provided below:

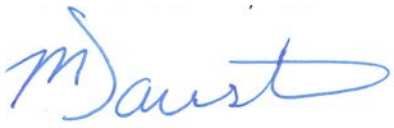
Construction Staking

- Stake the start and stop points of the Intertie Line and the Distribution Laterals.
- Stake pipeline routing every 50 on stations per approved plan with no offset. Points are being established so contractor can pothole the existing route.
- Stake the HPI and VPI locations per the approved plan.
- Provide Cut depths at the staked point location to invert of proposed pipe.

Total Cost of Services: ***$6,800***

This work would will be completed the week of 11/18. If you have any questions or need me to clarify any of above scope or work please give me a call.

Respectfully Submitted
Michael E. Dauster, PLS



Principal

3101 NORTH SILLECT AVE. | SUITE #103 | BAKERSFIELD, CA 93308
TELE: (661) 859-1923 | FAX: (661) 859-1376 | Email: mdauster@landmarkse.com

Krazan & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

Invoice No.
INV B615492 - 19352

Please remit to:
Krazan & Associates, Inc.
215 West Dakota Avenue
Clovis, California 93612
KA Tax I.D. No: 77-0039491

Phone: (661) 837-9200
Fax: (661) 837-9201

Client: Rosedale-Rio Bravo Water Storage District
Attn: Dan Bartel
P.O. Box 20820
Bakersfield, CA 93390

Project: **Central Intake Pipeline Project**
Location: **Cross Valley Canal to Goose Lake Slough**
Bakersfield, CA

Client Job No:
KA Proj. No: 02616523
P.O. No:
KA Client Nos: 19352: 16995
Permit No:

Invoice Date: **February 28, 2017**
KA Proj. Mgr: Burns, Larry

Date	Detailed Description of Services	Units	Rate	Amount
Construction Testing & Inspection Services				
01-Feb-17	Compaction Testing: Trench Backfill	6.00	89.00	$534.00
02-Feb-17	Compaction Testing: Trench Backfill	4.00	89.00	$356.00
06-Feb-17	Compaction Testing: Trench Backfill	6.00	89.00	$534.00
07-Feb-17	Compaction Testing: Trench Backfill	7.00	89.00	$623.00
08-Feb-17	Compaction Testing: Trench Backfill	6.00	89.00	$534.00
15-Feb-17	Compaction Testing: Trench Backfill	8.00	89.00	$712.00
15-Feb-17	Compaction Testing: Trench Backfill (OT)	3.00	133.50	$400.50
	Engineering Review	0.50	85.00	$42.50
	Report Preparation / Clerical	2.00	45.00	$90.00
			Subtotal:	$3,826.00
Laboratory Testing Services				
26-Jan-17	Tube Density Testing (Docket #95641)	2.00	45.00	$90.00
30-Jan-17	Sieve Analysis (Docket #95642)	2.00	145.00	$290.00
30-Jan-17	Tube Density Testing (Docket #95643)	2.00	45.00	$90.00
31-Jan-17	Tube Density Testing (Docket #95645)	3.00	45.00	$135.00
01-Feb-17	Sieve Analysis (Docket #95648)	2.00	145.00	$290.00
01-Feb-17	Tube Density Testing (Docket #95647)	2.00	45.00	$90.00
02-Feb-17	Sieve Analysis (Docket #95649)	1.00	145.00	$145.00

Please Pay This Amount: **$5,921.00**

Task 8

Payable upon receipt of invoice. Overdue accounts charged 1.5% per month (18% annually)
Remit copy of invoice with payment and include our invoice number on your check.

P-PAS

Form #103 / Revised 11/16/2016

Krazan & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

Invoice No.
INV B615492 - 19352

Please remit to:
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215 West Dakota Avenue
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Bakersfield, CA

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KA Proj. No: 02616523
P.O. No:
KA Client Nos: 19352: 16995
Permit No:

Invoice Date: **February 28, 2017**
KA Proj. Mgr: Burns, Larry

Date	Detailed Description of Services	Units	Rate	Amount
06-Feb-17	Maximum Density Curve (D698) (Docket #95650)	1.00	160.00	$160.00
06-Feb-17	Tube Density Testing (Docket #95651)	2.00	45.00	$90.00
06-Feb-17	Tube Density Testing (Docket #95652)	2.00	45.00	$90.00
08-Feb-17	Maximum Density Curve (D698) (Docket #95653)	1.00	160.00	$160.00
08-Feb-17	Sieve Analysis (Docket #95653)	1.00	145.00	$145.00
15-Feb-17	Maximum Density Curve (D698) (Docket #95657)	1.00	160.00	$160.00
15-Feb-17	Maximum Density Curve (D698) (Docket #95658)	1.00	160.00	$160.00
			Subtotal:	$2,095.00

Total of $5921 (rounded to $6,000) was costs incurred for **1 Month** of testing

Farmer COOP Project has an estimated construction time of **7 months,** however 1 month is usually spent on submittal review and material procurement.

$6,000/month x 6 months = $36,000 for Compaction and Lab Testing for the full duration of Project Construction

Total Amount Due: **$5,921.00**

Please Pay This Amount: **$5,921.00**
Task 8

Payable upon receipt of invoice. Overdue accounts charged 1.5% per month (18% annually)
Remit copy of invoice with payment and include our invoice number on your check.

P-PAS

Form #103 / Revised 11/16/2016

PROPOSAL BIDDING SCHEDULE

MAINLINE AND LATERALS

SPECIFICATIONS NO. SWID 19-02

SEMITROPIC WATER STORAGE AND SHAFTER-WASCO IRRIGATION DISTRICT GROUNDWATER RECHARGE INTERTIE

The following Proposal Bid Schedule lists the items necessary to complete the Work. Bidder shall complete the schedule including the unit and total price of each item, including applicable sales and other taxes. If the total cost of any item or the total Base Bid is inconsistent with the unit cost, the unit cost shall prevail. Payment of each item will be based on the Plans and are to be considered as "final pay quantity for each item", unless the dimensions of the portion of the work shown on the Plans are revised by the Engineer, or unless the portion of the work is eliminated. If the dimensions of the specific portion of the work are revised, and the revisions result in an increase or decrease in the estimated quantity of the portion of the work, the final quantity for payment will be revised in the amount represented by the changes in the dimensions. If the specific portion of the work is eliminated, the final pay quantity designated for the specific portion of the work will be eliminated. All costs for completing the Work described in the Contract Documents shall be included in the bid items listed below. Contractor shall include all costs to accomplish the project including (but not limited to): mobilization/demobilization, develop water supply, materials, equipment, labor, overhead, profit, taxes, delivery charges, permits etc.

BIDDING SCHEDULE
PROJECT-WIDE ITEMS

Item No.	Description	Estimated Quantity	Unit	Unit Price	Amount
1*	Mobilization	1	LS	$ LS	$ 91,800.00
2*	Demobilization	1	LS	$ LS	$ 54,000.00
3*	Develop and Provide Water Supply	1	LS	$ LS	$ 29,050.00
4*	Environmental Compliance	1	LS	$ LS	$ 27,000.00
5*	Prepare/Maintain/Restore Access Roads	1	LS	$ LS	$ 20,600.00
6*	Finish Grading of Project - Roads, Pipeline Alignment, Around Structures, etc.	1	LS	$ LS	$ 10,300.00

SUBTOTAL (ITEMS 1-6): $ 232,750.00

INTERTIE MAINLINE

Item No.	Description	Estimated Quantity	Unit	Unit Price	Amount
7*	Furnish and Install 36" C900 DR 32.5 CL125 PVC	7,875	LF	$ 133.00	$ 1,047,375.00
8*	Furnish and Install 18" DR 32.5 CL 125 PIP	40	LF	$ 203.00	$ 8,120.00
9*	Furnish and Install 12" DR 32.5 CL 125 PIP	400	LF	$ 69.00	$ 27,600.00
10*	Open Cut Road Crossings	6	EA	$ 13,020.00	$ 78,120.00
11*	Furnish and Install 36" C900 PVC to 36" CML&C Connection	1	LS	$ LS	$ 7,930.00
12*	Furnish and Install Lateral 134.4 Tie-In	1	LS	$ LS	$ 57,500.00
13*	Furnish and Install Connection to Existing 8" and 10" PVC	1	LS	$ LS	$ 5,000.00
14*	Connection to Existing Type 1 Farm Turnout	4	EA	$ 1,930.00	$ 7,720.00
15*	Connection to Existing Type 2 Farm Turnout	1	EA	$ 3,490.00	$ 3,490.00
16*	Connection to Existing Type 3 Farm Turnout	1	EA	$ 3,480.00	$ 3,480.00
17*	Furnish and Install 36" Underground Service Butterfly Valve	1	EA	$ 16,040.00	$ 16,040.00
18*	Furnish and Install 18" Underground Service Gate Valve	1	EA	$ 18,260.00	$ 18,260.00
19*	Furnish and Install 12" Underground Service Gate Valve	5	EA	$ 3,710.00	$ 18,550.00

20*	Furnish and Install 10" Underground Service Gate Valve	1	EA	$3,290.00	$3,290.00
21*	Furnish and Install 8" Underground Service Gate Valve	1	EA	$2,430.00	$2,430.00
22*	Furnish and Install 18" Weld On Tapping Sleeve	1	EA	$7,500.00	$7,500.00
23*	Furnish and Install 12" Weld On Tapping Sleeve	1	EA	$5,530.00	$5,530.00
24*	Furnish and Install 18" x 18" x 10" x 8" Steel Special	1	EA	$5,260.00	$5,260.00
25*	Furnish and Install 36" x 36" x 14" x 18" Cross	1	EA	$21,890.00	$21,890.00
26*	Furnish and Install 36" x 36" x 14" Tee	1	EA	$14,100.00	$14,100.00
27*	Furnish and Install 36" x 36" x 12" Tee	4	EA	$10,210.00	$40,840.00
28*	Furnish and Install 36" 45 deg. Bend	2	EA	$8,880.00	$17,760.00
29*	Furnish and Install 18" 90 deg. Bend	1	EA	$3,180.00	$3,180.00
30*	Furnish and Install 18" x 12" Reducer	1	EA	$2,340.00	$2,340.00
31*	Furnish and Install 3" Air Valves	7	EA	$8,550.00	$59,850.00
32*	Furnish and Install District Marker Posts	16	EA	$630.00	$10,080.00
33*	Removal, Disposal, and Abandonment of Existing Pipe	1	LS	$62,160.00	$62,160.00
			SUBTOTAL (ITEMS 7-33):		$1,555,395.00

DISTRIBUTION LATERALS

Item No.	Description	Estimated Quantity	Unit	Unit Price	Amount
34*	Furnish and Install 18" DR 32.5 CL 125 PIP	1,330	LF	$ 59.00	$ 78,470.00
35*	Furnish and Install 15" DR 32.5 CL 125 PIP	5,960	LF	$48.00	$ 286,080.00
36*	Furnish and Install 12" DR 32.5 CL 125 PIP	50	LF	$ 86.00	$ 4,300.00
37*	Open Cut Road Crossings	4	EA	$ 10,300.00	$41,200.00
38*	Connection to Existing Type 1 Farm Turnout	7	EA	$ 2,150.00	$ 15,050.00
39*	Connection to Existing Type 3 Farm Turnout	1	EA	$2600.00	$ 2,600.00
40*	Furnish and Install 18" Underground Service Gate Valve	1	EA	$ 18,260.00	$ 18,260.00
41*	Furnish and Install 14" Underground Service Gate Valve	2	EA	$ 16,490.00	$ 32,980.00
42*	Furnish and Install 14" Weld-On Tapping Sleeve	2	EA	$ 9,480.00	$ 18,960.00
43*	Furnish and Install 18" x 18" x 12" Tee	1	EA	$ 2,160.00	$ 2,160.00
44*	Furnish and Install 15" x 15" x 12" Tee	2	EA	$ 1,590.00	$ 3,180.00
45*	Furnish and Install 18" x 15" Reducer	1	EA	$ 1,680.00	$ 1,680.00
46*	Furnish and Install 15" 45 deg. Bend	1	EA	$ 1,930.00	$ 1,930.00
47*	Furnish and Install 15" 90 deg. Bend	5	EA	$ 1,890.00	$ 9,450.00
48*	Furnish and Install 2" Air Valves	7	EA	$ 6,540.00	$ 45,780.00

49*	Furnish and Install District Marker Posts	11	EA	$ 630.00	$ 6,930.00
50*	Removal, Disposal, and Abandonment of Existing Pipe	1	LS	$ LS	$ 37,500.00

SUBTOTAL (ITEMS 34-50): $ 606,510.00

TOTAL BID ITEMS (1-50): (Base Bid) $ 2,394,655.00

* Final Pay Quantity

Bid Submitted by (Contractor Name): W. M. Lyles Co.

Date: July 9, 2019

****END OF SECTION****

GEI Consultants

Client Name:	Semitropic Water Storage District	**Date:**	4/28/2020
Project Title:	Cox Canal Intertie Project	**GEI Project No.:**	1902567
Basis for Estimate:		**Prepared By:**	M. Hargrove / D. Imam
☐ 30% ☐ 60% ☐ 90%		**Checked By:**	D. Imam
☐ 100% ☒ Bid-Final ☐ Other			

Note: Estimate based on design level.

Engineer's Opinion of Probable Construction Cost

Item	Description	Quantity	Unit	Unit Price	Total
1	Mobilization/Demobilization	1	LS	$ 409,300	$ 409,300
2	Environmental Compliance	1	LS	$ 15,000	$ 15,000
3	Traffic Controls	1	LS	$ 12,500	$ 12,500
4	Stabilized Construction Entrances	3	EA	$ 10,000	$ 30,000
5	Pump Station Start-up and Testing	1	LS	$ 15,000	$ 15,000
6	Clearing and Grubbing	1	LS	$ 7,000	$ 7,000
7	SWSD Intake Canal Lining Removal and Disposal	1	LS	$ 44,700	$ 44,700
8	Dewatering (Trenches and Excavations)	1	LS	$ 12,000	$ 12,000
9	Temporary Canal Isolation	1	LS	$ 27,000	$ 27,000
10	Stripping (including offsite disposal)	1	LS	$ 32,500	$ 32,500
11	Borrow Fill, Grading, and Compaction	1	LS	$ 59,900	$ 59,900
12	Rip Rap with Geotextile Barrier	305	SY	$ 140.33	$ 42,800
13	3-inch Thick Gravel Rock Layer	12,400	SF	$ 4.00	$ 49,600
14	Fencing	302	LF	$ 31.46	$ 9,500
15	16-foot Wide Chain-link Fence Gates	4	EA	$ 1,300	$ 5,200
16	Bollards	32	EA	$ 2,500	$ 80,000
17	Stilling Well	1	LS	$ 3,500	$ 3,500
18	Intake Structure	1	LS	$ 529,200	$ 529,200
19	Outlet Structure	1	LS	$ 270,200	$ 270,200
20	Spillway and Stop Log Facility	1	LS	$ 994,600	$ 994,600
21	Pre-engineered Electrical Shade Structure	1	LS	$ 50,000	$ 50,000
22	Electrical Equipment Concrete Foundations	1	LS	$ 29,400	$ 29,400
23	Axial Flow Pumps and Motors	2	EA	$ 237,700	$ 475,400
24	48-inch Discharge Pipe and Appurtenances	1	LS	$ 371,100	$ 371,100
25	Non Walk-in 800 amp Metering/Main Switchboard	1	LS	$ 227,600	$ 227,600
26	Install District-Furnished Variable Frequency Drives	1	LS	$ 5,500	$ 5,500
27	Transformer	1	LS	$ 49,200	$ 49,200
28	48-inch Magnetic Flowmeter	2	EA	$ 18,450	$ 36,900
29	Instrumentation	1	LS	$ 7,700	$ 7,700
30	Site Electrical	1	LS	$ 190,300	$ 190,300
Construction Cost (w/o contingency) =					**$4,092,600**
Contingency (Upper accuracy; See Note 1 below)				10%	$ 409,300
Construction Cost (w/ contingency) =					**$4,501,900**

Notes:

1. Probable costs are based on AACE International Recommended Practice No. 18R-97_Rev 2016, Class 1 estimate based on Level of Project Definition 65% to 100% with an expected upper accuracy (high) of 3% to 15%. 10% is used for this estimate.
2. Sources for costs include similar project bids, RSMeans online cost data, and supplier quotes.
3. Costs do not include RTU hardware and offsite SCADA configuration. These items are assumed to be performed by the Owner's representative (Concepts In Controls).
4. Costs do not include furnishing Variable Frequency Drives (VFDs). These items are assumed to be furnished by the Owner's representative (Concepts In Controls) and installed by the Contractor.

CITY OF PALMDALE

PROJECT NUMBER: **591-C**

PROJECT NAME: **UPPER AMARGOSA CREEK RECHARGE PROJECT**

BID PROPOSAL DETAILED RESULTS:				**LONEROCK, Inc**		**BOWE Contractors**		**GRANITE Const**	
ITEM	DESCRIPTION	UNIT	QUA.	UNIT COST ($)	ITEM TOTAL ($)	UNIT COST ($)	ITEM TOTAL ($)	UNIT COST ($)	ITEM TOTAL ($)
1	Mobilization and Demobilization	LS	1	250,000	250,000	313,904	313,904	277,413	277,413
2	Preparation of a Native Desert Preservation Report	LS	1	5,000	5,000	21,595	21,595	5,250	5,250
3	Preparation of a SWPPP and PMP Implementation	LS	1	50,000	50,000	70,370	70,370	2,900	2,900
4	Clearing and Grubbing	LS	1	50,000	50,000	265,381	265,381	90,000	90,000
5	Excavation	LS	1	995,500	995,500	318,595	318,595	881,041	881,041
6	Placement of Type C Backfill	LS	1	495,000	495,000	428,829	428,829	55,000	55,000
7	Installation of 9-inch thick Soil Cement Liner	LS	1	350,000	350,000	645,244	645,244	585,000	585,000
8	Construction of 36 inch Storm Drain Relocations	LS	1	375,000	375,000	285,928	285,928	245,000	245,000
9	Construction of the 48 inch Outlet Structure	LS	1	120,000	120,000	146,810	146,810	217,000	217,000
10	Installation of 12-inch Diameter Collector Pipe	LF	280	215	60,200	60	16,800	75	21,000
11	Installation of 16-inch Diameter Collector Pipe	LF	660	250	165,000	66	43,560	85	56,100
12	Installation of 20-inch Diameter Collector Pipe	LF	400	265	106,000	98	39,200	120	48,000
13	Installation of 24-inch Diameter Collector Pipe	LF	972	275	267,300	119	115,668	150	145,800
14	Installation of 30-inch Diameter Collector Pipe	LF	381	325	123,825	182	69,342	240	91,440
15	Installation of 36-inch Diameter Collector Pipe	LF	561	415	232,815	243	136,323	275	154,275
16	48-Inch AWWA-C200 Steel Collector Pipe	LF	360	1,055	379,800	1,323	476,280	1,200	432,000
17	Installation of Cathodic Protection Test Station	LS	1	7,500	7,500	1,741	1,741	9,000	9,000
18	Installation of Air/Vac Valves	EA	2	5,500	11,000	22,920	45,840	22,000	44,000
19	Installation of Blow-Offs	EA	1	12,000	12,000	27,503	27,503	18,000	18,000
20	Construction of Turnout Structures	EA	7	47,000	329,000	95,739	670,173	50,000	350,000
21	Construction of Interbasin Connection Structures	EA	15	35,000	525,000	38,800	582,000	75,000	1,125,000
22	Construction of Emergency Spillway Structures	LS	1	80,000	80,000	126,773	126,773	163,400	163,400
23	Lodge Pole Wood Fencing with Gates	LF	5,700	35	199,500	25	142,500	23	131,100
24	Construction of Park Facilities	LS	1	175,000	175,000	367,418	367,418	342,000	342,000
25	Landscaping	LS	1	175,000	175,000	451,582	451,582	167,000	167,000
26	Pedestrian Bridge	LS	1	150,000	150,000	197,899	197,899	280,000	280,000
27	Site Management	LS	1	120,000	120,000	58,017	58,017	270,728	270,728
28	Surveying	LS	1	50,000	50,000	90,507	90,507	80,000	80,000
29	CPM Schedule	LS	1	25,000	25,000	11,604	11,604	6,000	6,000
30	Removal of Rip Rap at East of 25th Street Bridge	LS	1	10,000	10,000	110,233	110,233	25,000	25,000
	TOTAL ESTIMATED CONSTRUCTION COST ($):				**5,894,440**		**6,277,619**		**6,318,447**
Discrepancy in Proposal (Unit Prices Govern)					*				
Bid Ranking					**1**		**2**		**3**
Local Vendor Preference					**No**		**Yes**		**Yes**
Original Bid Is Within 10% of the Low Bid					-----		**Yes**		**Yes**

CITY OF PALMDALE

PROJECT NUMBER: **591-C**

PROJECT NAME: **UPPER AMARGOSA CREEK RECHARGE PROJECT**

BID PROPOSAL DETAILED RESULTS:				**SUKUT**		**C.A. RASMUSSEN**		**MICHELS PIPELINE**	
ITEM	DESCRIPTION	UNIT	QUA.	UNIT COST ($)	ITEM TOTAL ($)	UNIT COST ($)	ITEM TOTAL ($)	UNIT COST ($)	ITEM TOTAL ($)
1	Mobilization and Demobilization	LS	1	325,000	325,000	340,000	340,000	190,410	190,410
2	Preparation of a Native Desert Preservation Report	LS	1	6,500	6,500	7,900	7,900	25,000	25,000
3	Preparation of a SWPPP and PMP Implementation	LS	1	175,000	175,000	33,000	33,000	45,000	45,000
4	Clearing and Grubbing	LS	1	60,000	60,000	200,000	200,000	190,000	190,000
5	Excavation	LS	1	1,225,000	1,225,000	370,000	370,000	920,000	920,000
6	Placement of Type C Backfill	LS	1	390,000	390,000	804,000	804,000	60,000	60,000
7	Installation of 9-inch thick Soil Cement Liner	LS	1	775,000	775,000	694,000	694,000	890,000	890,000
8	Construction of 36 inch Storm Drain Relocations	LS	1	198,000	198,000	335,600	335,600	120,000	120,000
9	Construction of the 48 inch Outlet Structure	LS	1	166,000	166,000	251,100	251,100	170,000	170,000
10	Installation of 12-inch Diameter Collector Pipe	LF	280	74	20,720	140	39,200	150	42,000
11	Installation of 16-inch Diameter Collector Pipe	LF	660	85	56,100	152	100,320	160	105,600
12	Installation of 20-inch Diameter Collector Pipe	LF	400	118	47,200	222	88,800	260	104,000
13	Installation of 24-inch Diameter Collector Pipe	LF	972	130	126,360	234	227,448	280	272,160
14	Installation of 30-inch Diameter Collector Pipe	LF	381	185	70,485	351	133,731	360	137,160
15	Installation of 36-inch Diameter Collector Pipe	LF	561	294	164,934	439	246,279	470	263,670
16	48-Inch AWWA-C200 Steel Collector Pipe	LF	360	1,130	406,800	1,548	557,280	1,600	576,000
17	Installation of Cathodic Protection Test Station	LS	1	5,850	5,850	4,800	4,800	20,000	20,000
18	Installation of Air/Vac Valves	EA	2	20,000	40,000	24,500	49,000	27,000	54,000
19	Installation of Blow-Offs	EA	1	16,700	16,700	20,400	20,400	24,000	24,000
20	Construction of Turnout Structures	EA	7	57,500	402,500	71,590	501,130	82,000	574,000
21	Construction of Interbasin Connection Structures	EA	15	48,000	720,000	63,700	955,500	66,000	990,000
22	Construction of Emergency Spillway Structures	LS	1	132,000	132,000	130,200	130,200	180,000	180,000
23	Lodge Pole Wood Fencing with Gates	LF	5,700	26	148,200	27	153,900	30	171,000
24	Construction of Park Facilities	LS	1	358,000	358,000	237,000	237,000	260,000	260,000
25	Landscaping	LS	1	240,000	240,000	176,300	176,300	550,000	550,000
26	Pedestrian Bridge	LS	1	238,000	238,000	193,000	193,000	360,000	360,000
27	Site Management	LS	1	50,000	50,000	31,400	31,400	60,000	60,000
28	Surveying	LS	1	75,000	75,000	91,100	91,100	130,000	130,000
29	CPM Schedule	LS	1	19,500	19,500	3,800	3,800	25,000	25,000
30	Removal of Rip Rap at East of 25th Street Bridge	LS	1	20,000	20,000	9,800	9,800	35,000	35,000
	TOTAL ESTIMATED CONSTRUCTION COST ($):				**6,678,849**		**6,985,988**		**7,544,000**
Discrepancy in Proposal (Unit Prices Govern)									*
Bid Ranking					**4**		**5**		**6**
Local Vendor Preference					**No**		**No**		**No**
Original Bid Is Within 10% of the Low Bid					**No**		**No**		**No**

W. M. Lyles Co.
Preliminary Budget
P667 and System A Intertie
26-Oct-17

			Turnouts			
Description of Option	Budget	CFS	Del/GW	GW	Del	Comments
Section 14 Connection, Booster Pump Stn	5,574,580	35	6	2	2	High velocities / high pressure in 21" PVC Pipeline
Section 14 Connection, Parallel Pipeline	7,147,300	35	6	2	2	Split flows between 21" and 27" PVC Pipelines
Section 23 Connection, Booster Pump Stn	7,057,260	30	8	2	2	Upsize X-C PVC to 27". Include 2 X-C Turnouts
Section 23 Connection, Booster Pump Stn	6,577,260	20	6	2	2	Upsize X-C PVC to 27". No X-C Turnouts

W. M. Lyles Co.
Preliminary Budget
P667 and System A Intertie
Lat P667 Connection at Section 14 - 40cfs Booster Pump Station
26-Oct-17

			Budget Prices	
Description	**Quantity**		**Unit**	**Extension**
18" CL125 PVC Pipeline	2,640	LF	70	184,800
27" CL125 PVC Pipeline	1,600	LF	120	192,000
30" CL125 RCP Pipeline	7,920	LF	220	1,742,400
36" CL125 RCP Pipeline	13,200	LF	260	3,432,000
PVC/RCP Groundwater Removal	5,280	LF	20	105,600
14" BFV Assy	3	EA	4,200	12,600
18" BFV Assy	1	EA	5,400	5,400
20" BFV Assy	0	EA	6,000	0
24" BFV Assy	1	EA	7,200	7,200
30" BFV Assy	3	EA	10,500	31,500
36" BFV Assy	0	EA	13,500	0
Turnouts - Delivery / Recovery	6	EA	40,000	240,000
Turnouts - Delivery Only	2	EA	35,000	70,000
Turnouts - Recovery Only	2	EA	20,000	40,000
System Connections	2	EA	10,000	20,000
Misc Appurtenances	25,360	LF	3	76,080
Critter Fence - Temporary	0	LF	0	0
Critter Fence - Permanent	0	LF	0	0
SWSD Purchased RCP	1	LS	(1,785,000)	(1,785,000)
Booster Pumping Plant, Standpipe, Electric	40	CFS	30,000	1,200,000
System X Construction Subtotal				**5,574,580**

SPECIALTY CONSTRUCTION

Pay Estimate 9
Period Ending 7/1/2017 - Final

216105 - Rosedale Rio-Bravo Water Storage District - Central Intake Pipeline
Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
1	**MOBILIZATION**	**1.00**	**LS**	**$171,000.00**	**$ 171,000.00**						
1a.)	Mobilize & Setup Site Facilities	1.00	LS	$151,000.00	$ 151,000.00	1.00	$151,000.00		$0.00	1.00	$151,000.00
1b.)	Site Facilities	4.00	Month	$5,000.00	$ 20,000.00	4.00	$20,000.00		$0.00	4.00	$20,000.00
2	**DEMOBILIZATION**	**1.00**	**LS**	**$19,000.00**	**$ 19,000.00**	**0.90**	**$17,100.00**	**0.10**	**$1,900.00**	**1.00**	**$19,000.00**
3	**DEVELOP AND PROVIDE WATER SUPPLY**	**1.00**	**LS**	**$58,000.00**	**$ 58,000.00**						
3a.)	Install Water Supply Facilities	1.00	LS	$40,000.00	$ 40,000.00	1.00	$40,000.00		$0.00	1.00	$40,000.00
3b.)	Maintain Construction Water Supply	4.00	Month	$4,500.00	$ 18,000.00	4.00	$18,000.00		$0.00	4.00	$18,000.00
4	**ENVIRONMENTAL COMPLIANCE AND PERMITTING**	**1.00**	**LS**	**$40,000.00**	**$ 40,000.00**						
4a.)	Prepare SWPP & Annual Reports	1.00	LS	$7,500.00	$ 7,500.00	1.00	$7,500.00		$0.00	1.00	$7,500.00
4b.)	Install & Maintain SWPPP BMP's	4.00	Month	$3,250.00	$ 13,000.00	4.00	$13,000.00		$0.00	4.00	$13,000.00
4c.)	Prepare Dust Control Plan	1.00	LS	$3,500.00	$ 3,500.00	1.00	$3,500.00		$0.00	1.00	$3,500.00
4d.)	Dust Control BMP's	4.00	Month	$4,000.00	$ 16,000.00	4.00	$16,000.00		$0.00	4.00	$16,000.00
5	**PREPARE, MAINTAIN, AND RESTORE ACCESS ROUTES**	**1.00**	**LS**	**$28,000.00**	**$ 28,000.00**						
5a.)	Establish Access Routes	1.00	LS	$20,000.00	$ 20,000.00	1.00	$20,000.00		$0.00	1.00	$20,000.00
5b.)	Maintain Access Routes	4.00	Month	$1,000.00	$ 4,000.00	4.00	$4,000.00		$0.00	4.00	$4,000.00
5c.)	Restore Acces Routes	1.00	LS	$4,000.00	$ 4,000.00	1.00	$4,000.00		$0.00	1.00	$4,000.00
6	**FINISH GRADING OF PROJECT - ROADS, PIPELINE ALIGNMENT, AROUND STRUCTURES, ETC.**	**1.00**	**LS**	**$54,000.00**	**$ 54,000.00**						
6a.)	Finish Grade - Goose Lake Slough	1.00	LS	$5,000.00	$ 5,000.00	1.00	$5,000.00		$0.00	1.00	$5,000.00
6b.)	Finish Grade - Sta. 63+00 to 88+35	1.00	LS	$22,000.00	$ 22,000.00	1.00	$22,000.00		$0.00	1.00	$22,000.00
6c.)	Finish Grade - Sta. 40+00 to 63+00	1.00	LS	$22,000.00	$ 22,000.00	1.00	$22,000.00		$0.00	1.00	$22,000.00
6d.)	Finish Grade - Sta. 28+50 to 40+00	1.00	LS	$5,000.00	$ 5,000.00	1.00	$5,000.00		$0.00	1.00	$5,000.00
7	**CLEARING AND GRUBBING**	**12.30**	**Acre**	**$6,500.00**	**$ 79,950.00**						
7a.)	Clear Stockdale Road South	1.00	LS	$8,500.00	$ 8,500.00	1.00	$8,500.00		$0.00	1.00	$8,500.00
7b.)	Remove Trees Johnson Farms South	1.00	LS	$28,000.00	$ 28,000.00	1.00	$28,000.00		$0.00	1.00	$28,000.00
7c.)	Remove Trees Dillard Ranch	1.00	LS	$22,000.00	$ 22,000.00	1.00	$22,000.00		$0.00	1.00	$22,000.00
7d.)	Remove Trees Missei	1.00	LS	$21,450.00	$ 21,450.00	1.00	$21,450.00		$0.00	1.00	$21,450.00
8	**FURNISH AND INSTALL 63" HDPE DR41 PIPE**	**8,291.00**	**LF**	**$302.00**	**$ 2,503,882.00**						
8a.)	Furnish 63" HDPE	8,291.00	LF	$135.00	$ 1,119,285.00	8,291.00	$1,119,285.00		$0.00	8291.00	$1,119,285.00
8b.)	Fuse HDPE	8,291.00	LF	$31.50	$ 261,166.50	8,291.00	$261,166.50		$0.00	8291.00	$261,166.50
8c.)	String 63" HDPE	8,291.00	LF	$13.50	$ 111,928.50	8,291.00	$111,928.50		$0.00	8291.00	$111,928.50

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Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
8d.)	Excavate for 63" HDPE	8,291.00	LF	$30.00	$ 248,730.00	8,291.00	$248,730.00		$0.00	8291.00	$248,730.00
8e.)	Install 63" HDPE	8,291.00	LF	$50.00	$ 414,550.00	8,291.00	$414,550.00		$0.00	8291.00	$414,550.00
8f.)	Backfill 63" HDPE	8,291.00	LF	$35.00	$ 290,185.00	8,291.00	$290,185.00		$0.00	8291.00	$290,185.00
8g.)	Test 63" HDPE	8,291.00	LF	$7.00	$ 58,037.00	8,291.00	$58,037.00		$0.00	8291.00	$58,037.00
9	**F&I 63" HDPE 90 DEGREE ELL**	**3.00**	**EA**	**$21,000.00**	**$ 63,000.00**						
9a.)	Furnish 63" HDPE 90* Elbow	3.00	EA	$12,500.00	$ 37,500.00	3.00	$37,500.00		$0.00	3.00	$37,500.00
9b.)	Install Elbow	3.00	EA	$6,000.00	$ 18,000.00	3.00	$18,000.00		$0.00	3.00	$18,000.00
9c.)	Thrust Block	3.00	EA	$2,500.00	$ 7,500.00	3.00	$7,500.00		$0.00	3.00	$7,500.00
10	**F&I 63" 45 DEGREE BEND**	**2.00**	**EA**	**$22,000.00**	**$ 44,000.00**						
10a.)	Furnish 63" HDPE 45* Elbow	2.00	EA	$12,500.00	$ 25,000.00	2.00	$25,000.00		$0.00	2.00	$25,000.00
10b.)	Install Elbow	2.00	EA	$7,000.00	$ 14,000.00	2.00	$14,000.00		$0.00	2.00	$14,000.00
10c.)	Thrust Block	2.00	EA	$2,500.00	$ 5,000.00	2.00	$5,000.00		$0.00	2.00	$5,000.00
11	**F&I HDPE 63"X63"X63" FLANGED TEE**	**1.00**	**EA**	**$58,000.00**	**$ 58,000.00**						
11a.)	Furnish 63" HDPE TEE	1.00	EA	$42,000.00	$ 42,000.00	1.00	$42,000.00		$0.00	1.00	$42,000.00
11b.)	Install TEE	1.00	EA	$12,500.00	$ 12,500.00	1.00	$12,500.00		$0.00	1.00	$12,500.00
11c.)	Thrust Block	1.00	EA	$3,500.00	$ 3,500.00	1.00	$3,500.00		$0.00	1.00	$3,500.00
12	**F&I 60" UNDERGROUND SERVICE BUTTERFLY VALVE**	**3.00**	**EA**	**$75,700.00**	**$ 227,100.00**						
12a.)	Furnish Butterfly Valve	3.00	EA	$55,000.00	$ 165,000.00	3.00	$165,000.00		$0.00	3.00	$165,000.00
12b.)	Install Valve	3.00	EA	$19,200.00	$ 57,600.00	3.00	$57,600.00		$0.00	3.00	$57,600.00
12c.)	Raise Valve	3.00	Each	$1,500.00	$ 4,500.00	3.00	$4,500.00		$0.00	3.00	$4,500.00
13	**F&I INSPECTION PORT AND AIR VENT ASSEMBLIES**	**9.00**	**EA**	**$48,200.00**	**$ 433,800.00**						
13a.)	Furnish & Install Piping	9.00	Each	$28,200.00	$ 253,800.00	9.00	$253,800.00		$0.00	9.00	$253,800.00
13b.)	Furnish & Install Precast Manway Vault	9.00	Each	$10,000.00	$ 90,000.00	9.00	$90,000.00		$0.00	9.00	$90,000.00
13c.)	Furnish & Install Precast Air Vac Riser	9.00	Each	$10,000.00	$ 90,000.00	9.00	$90,000.00		$0.00	9.00	$90,000.00
14	**FURNISH PUMP STATION TIE-IN**	**1.00**	**EA**	**$26,500.00**	**$ 26,500.00**						
14a.)	Furnish Pump Station HDPE	1.00	EA	$26,500.00	$ 26,500.00	1.00	$26,500.00		$0.00	1.00	$26,500.00
15	**F&I 110' STOCKDALE HIGHWAY CROSSING**	**1.00**	**LS**	**$258,000.00**	**$ 258,000.00**						
15a.)	Excavate & Secure Bore & Receiving Pits	1.00	LS	$35,000.00	$ 35,000.00	1.00	$35,000.00		$0.00	1.00	$35,000.00
15b.)	Bore & Jack Steel Casing	1.00	LS	$175,000.00	$ 175,000.00	1.00	$175,000.00		$0.00	1.00	$175,000.00

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Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
15c.)	Install 63" Carrier Pipe	1.00	LS	$36,500.00	$ 36,500.00	1.00	$36,500.00		$0.00	1.00	$36,500.00
15d.)	Backfill Bore & Receiving Pits	1.00	LS	$10,000.00	$ 10,000.00	1.00	$10,000.00		$0.00	1.00	$10,000.00
15e.)	Cathodic Test Station	1.00	LS	$1,500.00	$ 1,500.00	1.00	$1,500.00		$0.00	1.00	$1,500.00
16	**F&I 100' SJVR CROSSING**	**1.00**	**LS**	**$231,000.00**	**$ 231,000.00**						
16a.)	Excavate & Secure Bore & Receiving Pits	1.00	LS	$35,000.00	$ 35,000.00	1.00	$35,000.00		$0.00	1.00	$35,000.00
16b.)	Bore & Jack Steel Casing	1.00	LS	$154,500.00	$ 154,500.00	1.00	$154,500.00		$0.00	1.00	$154,500.00
16c.)	Install 63" Carrier Pipe	1.00	LS	$30,000.00	$ 30,000.00	1.00	$30,000.00		$0.00	1.00	$30,000.00
16d.)	Backfill Bore & Receiving Pits	1.00	LS	$10,000.00	$ 10,000.00	1.00	$10,000.00		$0.00	1.00	$10,000.00
16e.)	Cathodic Test Station	1.00	LS	$1,500.00	$ 1,500.00	1.00	$1,500.00		$0.00	1.00	$1,500.00
17	**F&I 60' BRIMHALL ROAD CROSSING**	**1.00**	**LS**	**$88,800.00**	**$ 88,800.00**						
17a.)	Install Brimhall Detour	1.00	LS	$5,000.00	$ 5,000.00	1.00	$5,000.00		$0.00	1.00	$5,000.00
17b.)	Pothole Gas Line	1.00	LS	$2,000.00	$ 2,000.00	1.00	$2,000.00		$0.00	1.00	$2,000.00
17c.)	Excavate & Install 63" HDPE	1.00	LS	$41,800.00	$ 41,800.00	1.00	$41,800.00		$0.00	1.00	$41,800.00
17d.)	Restore Subgrade	1.00	LS	$20,000.00	$ 20,000.00	1.00	$20,000.00		$0.00	1.00	$20,000.00
17e.)	Restore Roadway	1.00	LS	$20,000.00	$ 20,000.00	1.00	$20,000.00		$0.00	1.00	$20,000.00
18	**F&I STOCKDALE EAST TURNOUT**	**1.00**	**LS**	**$62,000.00**	**$ 62,000.00**						
18a.)	Furnish & Install Piping	1.00	LS	$46,000.00	$ 46,000.00	1.00	$46,000.00		$0.00	1.00	$46,000.00
18b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
18c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
19	**F&I MATUK TURNOUT**	**1.00**	**LS**	**$101,000.00**	**$ 101,000.00**						
19a.)	Furnish & Install Piping	1.00	LS	$54,000.00	$ 54,000.00	1.00	$54,000.00		$0.00	1.00	$54,000.00
19b.)	Funrish & Install 36" Valve	1.00	LS	$35,000.00	$ 35,000.00	1.00	$35,000.00		$0.00	1.00	$35,000.00
19c.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$6,000.00	$ 6,000.00	0.99	$5,940.00	0.01	$60.00	1.00	$6,000.00
19d.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
20	**F&I JOHNSON SOUTH TURNOUT**	**1.00**	**LS**	**$63,000.00**	**$ 63,000.00**						
20a.)	Furnish & Install Piping	1.00	LS	$47,000.00	$ 47,000.00	1.00	$47,000.00		$0.00	1.00	$47,000.00
20b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
20c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00

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Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
21	**F&I DILLARD TURNOUT**	**1.00**	**LS**	**$63,600.00**	**$ 63,600.00**						
21a.)	Furnish & Install Piping	1.00	LS	$47,600.00	$ 47,600.00	1.00	$47,600.00		$0.00	1.00	$47,600.00
21b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
21c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
22	**F&I JOHNSON NORTH TURNOUT**	**1.00**	**LS**	**$62,700.00**	**$ 62,700.00**						
22a.)	Furnish & Install Piping	1.00	LS	$46,700.00	$ 46,700.00	1.00	$46,700.00		$0.00	1.00	$46,700.00
22b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
22c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
23	**F&I NIKKEL TURNOUT**	**1.00**	**LS**	**$66,200.00**	**$ 66,200.00**						
23a.)	Furnish & Install Piping	1.00	LS	$50,200.00	$ 50,200.00	1.00	$50,200.00		$0.00	1.00	$50,200.00
23b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
23c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
24	**F&I MISSEI NO TURNOUT**	**1.00**	**LS**	**$66,200.00**	**$ 66,200.00**						
24a.)	Furnish & Install Piping	1.00	LS	$50,200.00	$ 50,200.00	1.00	$50,200.00		$0.00	1.00	$50,200.00
24b.)	Furnish & Install Precast Riser & Above Grade Piping	1.00	LS	$10,000.00	$ 10,000.00	0.99	$9,900.00	0.01	$100.00	1.00	$10,000.00
24c.)	Raise Valves & Install Bollards	1.00	LS	$6,000.00	$ 6,000.00	1.00	$6,000.00		$0.00	1.00	$6,000.00
25	**F&I SUPERIOR PIPELINE TIE-INS W/ OPEN AIR VENT**	**1.00**	**LS**	**$105,150.00**	**$ 105,150.00**						
25a.)	Furnish & Install Piping	1.00	LS	$55,000.00	$ 55,000.00	1.00	$55,000.00		$0.00	1.00	$55,000.00
25b.)	Furnish & Install Precast Manway Vault	1.00	LS	$10,000.00	$ 10,000.00	1.00	$10,000.00		$0.00	1.00	$10,000.00
25c.)	Furnish & Install Open Air Vent	1.00	LS	$28,000.00	$ 28,000.00	1.00	$28,000.00		$0.00	1.00	$28,000.00
25d.)	Funrish & Install 30" Pipe Stubs	1.00	LS	$12,150.00	$ 12,150.00	1.00	$12,150.00		$0.00	1.00	$12,150.00
26	**F&I GOOSE LAKE SLOUGH INLET STRUCTURE**	**1.00**	**LS**	**$123,500.00**	**$ 123,500.00**						
26a.)	Structure Excavation	1.00	LS	$5,000.00	$ 5,000.00	1.00	$5,000.00		$0.00	1.00	$5,000.00
26b.)	Reinforcing Steel	1.00	LS	$15,000.00	$ 15,000.00	1.00	$15,000.00		$0.00	1.00	$15,000.00
26c.)	Construct Concrete Structure	1.00	LS	$81,000.00	$ 81,000.00	1.00	$81,000.00		$0.00	1.00	$81,000.00
26d.)	Misc Metal Grating Trash Rack Handrail etc.	1.00	LS	$20,000.00	$ 20,000.00	1.00	$20,000.00		$0.00	1.00	$20,000.00
26e.)	Structure Backfill	1.00	LS	$2,500.00	$ 2,500.00	1.00	$2,500.00		$0.00	1.00	$2,500.00

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Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
27	**CONSTRUCT SAND TRAP AND RIP-RAP**	**1.00**	**LS**	**$91,400.00**	**$ 91,400.00**						
27a.)	Grade Channel	1.00	LS	$45,000.00	$ 45,000.00	1.00	$45,000.00		$0.00	1.00	$45,000.00
27b.)	Install Rip Rap	1.00	LS	$46,400.00	$ 46,400.00	1.00	$46,400.00		$0.00	1.00	$46,400.00
28	**MODIFY/REMOVE EXISTING IRRIGATION LINES**	**1.00**	**LS**	**$27,500.00**	**$ 27,500.00**						
28a.)	Remove Existing Irrigation Lines	1.00	LS	$20,000.00	$ 20,000.00	1.00	$20,000.00		$0.00	1.00	$20,000.00
28b.)	Cap & Abandon	1.00	LS	$7,500.00	$ 7,500.00	1.00	$7,500.00		$0.00	1.00	$7,500.00
29	**CONSTRUCT LEVEE - STOCKDALE EAST PROPERTY (2375 LF)**	**6,500.00**	**CY**	**$8.16**	**$ 53,040.00**						
29a.)	Construct Levee	6,500.00	CY	$8.16	$ 53,040.00	6,500.00	$53,040.00		$0.00	6500.00	$53,040.00
Contract Total		**1**	**LS**		**$5,269,322.00**		**$5,266,762.00**		**$2,560.00**		**$5,269,322.00**
CCO 02	**Reduce Almond Tree Take**	**1.00**	**LS**	**$8,021.37**	**$ 8,021.37**	**1.00**	**$8,021.37**		**$0.00**	**1.00**	**$8,021.37**
CCO 03	**Submittal 25 and RFI 10 Revisions**	**1.00**	**LS**	**$31,098.77**	**$ 31,098.77**						
1.)	Stockdale East Turnout 12" Butterfly Valve	1.00	LS	$2,407.87	$ 2,407.87	1.00	$2,407.87		$0.00	1.00	$2,407.87
2.)	Matuk Turnout 12" Butterfly Valve	1.00	LS	$2,351.15	$ 2,351.15	1.00	$2,351.15		$0.00	1.00	$2,351.15
3.)	Johnson South Turnout 12" Butterfly Valve & Pipe Modifications	1.00	LS	$7,082.84	$ 7,082.84	1.00	$7,082.84		$0.00	1.00	$7,082.84
4.)	Inspection Port Sta. 48+89 & 68+02 Pipe Modifications	1.00	LS	$1,694.65	$ 1,694.65	1.00	$1,694.65		$0.00	1.00	$1,694.65
5.)	Dillard Turnout 12" Butterfly Valve	1.00	LS	$2,407.87	$ 2,407.87	1.00	$2,407.87		$0.00	1.00	$2,407.87
6.)	Inspection Port Sta. 58+39	1.00	LS	$2,600.88	$ 2,600.88	1.00	$2,600.88		$0.00	1.00	$2,600.88
7.)	Johnson North Turnout 12" Butterfly Valve & Pipe Modifications	1.00	LS	$5,610.46	$ 5,610.46	1.00	$5,610.46		$0.00	1.00	$5,610.46
8.)	Nikkel Turnout 12" Butterfly Valve	1.00	LS	$2,624.20	$ 2,624.20	1.00	$2,624.20		$0.00	1.00	$2,624.20
9.)	Missei Turnout 12" Butterfly Valve & Pipe Modifications	1.00	LS	$4,318.85	$ 4,318.85	1.00	$4,318.85		$0.00	1.00	$4,318.85
CCO 04	**63-Inch DR 32.5 HDPE Flange Adapter and Ductile Backing Ring**	**1.00**	**LS**	**$11,392.92**	**$ 11,392.92**	**1.00**	**$11,392.92**		**$0.00**	**1.00**	**$11,392.92**
CCO 05	**Fusion Services, Bid Item 14**	**1.00**	**LS**	**$7,832.09**	**$ 7,832.09**	**1.00**	**$7,832.09**		**$0.00**	**1.00**	**$7,832.09**
CCO 06	**Pioneer Canal Crossing**	**1.00**	**LS**	**$18,309.31**	**$ 18,309.31**	**1.00**	**$18,309.31**		**$0.00**	**1.00**	**$18,309.31**
CCO 07	**60-Inch Pipe Extension to Stockdale East**	**1.00**	**LS**	**$62,575.44**	**$ 62,575.44**	**1.00**	**$62,575.44**		**$0.00**	**1.00**	**$62,575.44**
CCO 08	**HDPE Offset & Concrete Removal @ Missei Turnout**	**1.00**	**LS**	**$2,891.29**	**$ 2,891.29**	**1.00**	**$2,891.29**		**$0.00**	**1.00**	**$2,891.29**
CCO 09	**Fill Basin @ Stockdale Hwy & Hwy 43**	**1.00**	**LS**	**$2,335.74**	**$ 2,335.74**	**1.00**	**$2,335.74**		**$0.00**	**1.00**	**$2,335.74**

SPECIALTY CONSTRUCTION

Pay Estimate 9
Period Ending 7/1/2017 - Final

216105 - Rosedale Rio-Bravo Water Storage District - Central Intake Pipeline

Pay Estimate

		CONTRACT AMOUNT				PRIOR ESTIMATE		THIS ESTIMATE		TOTAL TO DATE	
Item	Description	Quantity	UOM	Unit Price	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Contract Total with Changes		1	LS		$5,413,778.93		$5,411,218.93		$2,560.00		$5,413,778.93

PROOF OF PUBLICATION

The BAKERSFIELD CALIFORNIAN
3700 PEGASUS DRIVE
BAKERSFIELD, CA 93308

GEI Consultants, Inc.
5001 California Ave., Suite 120
BAKERSFIELD, CA 93309

Ad Number:	14684254	**PO #:**	
Edition:	CALC	**Run Times**	4
Class Code	Legal Notices		
Start Date	1/10/2020	**Stop Date**	1/27/2020
Billing Lines	189	**Inches**	1,135.19
Total Cost	$ 6,571.54	**Account**	1BOO05
Billing Address	GEI Consultants, Inc. 5001 California Ave., Suite 120 BAKERSFIELD,CA 93309		

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER
AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

1/10/20
1/13/20
1/20/20
1/27/20

ALL IN YEAR 2020

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

DATED AT BAKERSFIELD CALIFORNIA
1/27/20

Solicitor I.D.: 0

First Text
SECTION A NOTICE INVITING BIDS (PUBLISHE

Ad Number 14684254

SECTION A

NOTICE INVITING BIDS (PUBLISHED VERSION)

NORTH KERN WATER STORAGE DISTRICT Kern County, California

NOTICE INVITING BIDS

ELECTRICAL WORK AND FIELD INSTALLATION
OF PLC AND RADIO MATERIAL
SPECIFICATIONS NO. NK-614

NOTICE IS HEREBY GIVEN that sealed bids will be received by the NORTH KERN WATER STORAGE DISTRICT ("District") until **2:00 p.m. on February 7, 2020**, for the construction of the Electrical Work and Field Installation of PLC and Radio Material Project (the "Project"), which includes, without limitation, the furnishing of all labor, services, materials, tools, equipment, supplies, and facilities necessary therefore, and transportation, utilities, and all other items as provided in the Contract Documents associated herewith, of which each and every document comprising the entirety of the Contract Documents are incorporated at length as if fully set forth herein. The Project is located in vicinity of the City of Bakersfield, County of Kern. Bids will be received at the offices of the District, 33380 Cawelo Extended, Bakersfield, CA 93308, until the stated time and date, at which time and place the Bids will be publicly opened and read aloud. If a Contract is awarded it will be awarded to the Responsible Bidder submitting the lowest Responsive Bid Proposal, provided that the Bid is reasonable and that its acceptance is in the best interest of the District. The District reserves the right, after opening Bids, to reject any or all Bids, or to award the Contract to the lowest responsive and responsible Bidder and reject all other Bids after consideration is made with respect thereto.

The "Bidding Requirements" and the Work to be performed and completed are fully described in the Plans and Specifications, referred to as Specifications No. NK-614, which are available for inspection during normal business hours without charge at the offices of the District and at the offices of GEI Consultants, Inc., 5001 California Ave., Suite 120, Bakersfield, California 93309. Requests for Plans and Specifications will be honored, without charge, at the office of GEI Consultants, Inc. (GEI).

Pursuant to Public Contract Code Section 20584.5, all Bids shall be presented under sealed cover and shall provide one of the following forms of security made payable to "North Kern Water Storage District": (1) cashier's check or a certified check made payable to the District; or (2) a bidder's bond executed by an admitted surety insurer made payable to the district. Upon an award to the lowest Bidder, an unsuccessful Bidder's security shall be returned within 60 days after the Contract is awarded. **A pre-bid conference and tour will be held by request only, with a minimum of three days' notice prior to the request job walk,** commencing at the offices of District, 33380 Cawelo Extended, Bakersfield, CA 93308, and then continued at the Project site. All Bidders must contact the District to coordinate additional site visits.

While the Work to be performed and completed with respect to the Project is more fully described and detailed in the Plans and Specifications, it includes the following:

Base Contract: The Work consists of Electrical Work and Field Installation of PLC and Radio Materials at 54 District-owned production wells, 16 Remote Terminal Units (RTUs), Wonderful Tower, and Main Office connected to the District's SCADA system. Bidder is advised that PLC panels, Solar Charger Panels, and Radio/telemetry have already been prefabricated. All work is to be completed by June 24, 2020.

The Work generally consists of the following at each production well site:

1. Procurement and installation of well level pressure transducer, including retrofit to existing well sounding tube to accommodate the installation of the new level pressure transducer.

2. Installation of District furnished, and prefabricated PLC Panels and telemetry mounted on an existing wooden pole.

3. Electrical work consisting of procurement and installation of new control power transformers, power monitors, CT's, and flow meter connection cables, including trenching, conduit run, wire pull and termination.

4. Testing and Commissioning.

The Work generally consists of the following at each of the 16 Remote Terminal Units (RTUs) site:

1. Procurement and installation of level ultrasonic transducers, including retrofit of existing stilling well to accommodate the installation of the ultrasonic transducer.

2. Installation of District furnished, and prefabricated PLC Panels and telemetry, including retrofit of existing RTU enclosure to accommodate the installation of the new PLC and telemetry system.

3. Electrical work consisting of procurement and installation of conductors and conduits, and also including trenching, conduit run, wire pull and termination.

4. Installation of PV solar system with District furnished, and prefabricated solar charger panels.

5. Testing and Commissioning.

The Work generally consists of the following at the Main Office site:

1. Installation of District furnished, and prefabricated PLC back panel and telemetry.

2. Electrical work consisting of procurement and installation of conductors and conduits, and also including trenching, conduit run, wire pull and termination.

3. Testing and Commissioning.

The Work generally consists of the following at the Wonderful Tower site:

1. Installation of PV solar system with District furnished, and prefabricated solar charger panels..

2. Electrical work consisting of procurement and installation of conductors and conduits, and also including trenching, conduit run, wire pull and termination.

3. Testing and Commissioning.

Contractor shall coordinate with ProUsys, Inc. the District's consultant for the system startup, testing and commissioning of each site.

The Work must be completed during the period identified in all Plans and Specifications Documents for the Project, which are incorporated herein

Pursuant to Public Contract Code Section 6100(b), any contractor, subcontractor, and/or specialty contractor, as defined under Business and Professions Code Section 7026, submitting a proposal shall possess, at the time the contract is awarded, a C-10 Electrical License and that classification of contractor's license required by law to enable the contractor to perform the Work contemplated under the Contract Documents, as more specifically set forth in the Plans and Specifications for the Project. Contractors shall provide the District with their Contractor's license number and expiration date as provided in the Bid Proposal. It is the District's intent that "plans," as used in Public Contract Code Section 3300, is defined as the construction contract documents, which include both the drawings and the specifications. Pursuant to Labor Code Section 1725.5 et seq., in order to be qualified to bid on, be listed in the Bid/Proposal, or engage in the performance of the Work, a contractor and/or subcontractor shall be registered with the Department of Industrial Relations in the manner prescribed and set forth under Labor Code Section 1725.5 *et seq.*

This published notice does NOT reproduce all of the bidding requirements; accordingly, the above- referenced Plans and Specifications, as well as all Contract Documents associated with the Project, are hereby referred to and incorporated into this Notice Inviting Bids. An acceptable Bid can only be prepared by reading and following all of the instructions that are found in the Specifications, which includes Section A - "Notice Inviting Bids" and Section B - "Instructions to Bidders", both of which are incorporated herein, thereof.

Each Bidder is required to sign a Noncollusion Affidavit and submit it with his Bid.

The successful Bidder is required to furnish a Payment Bond in an amount of 100% of the contract and a Faithful Performance Bond in an amount of 100% of the contract; the bonds to be secured by a surety company or surety companies satisfactory to the District.

Bids shall be based on the payment of not less than the prevailing rate of wages for this locality and project as determined by the Director of the California Department of Industrial Relations pursuant to Labor Code Section 1770 et seq. and as provided in the Davis-Bacon Act, whichever is greater. Copies of the prevailing rates of per diem wages are on file at the office of the District and will be made available to any interested party on request. Prevailing wage schedules for Kern County are also available from the Department of Industrial Relations-Division of Labor Statistics & Research via the internet at www.dir.ca.gov. Copies of Davis-Bacon Act wages can be found at www.wdol.gov.

The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. (See Labor Code Section 1771.4(a)(1).) Each contractor and subcontractor shall furnish the records specified in Labor Code Section 1776 directly to the Labor Commissions, in the manner set forth in Labor Code Section 1771.4(a)(3)(A)-(B).) Contractors shall be required to post job site notices, as prescribed by regulation. (*See* Labor Code Section 1771.4(a)(2).)

Pursuant to Public Contract Code Section 22300, equivalent securities may be substituted for monies withheld to ensure performance of the Contract. The District reserves the right to solely determine the adequacy of the securities being proposed by the Bidder and the value of those securities. At the request and expense of the Contractor and pursuant to Public Contract Code Section 22300, securities equivalent to any amount withheld by the District to ensure the Contractor's performance under the Contract shall be deposited with the District as substitute security, or, at the Contractor's request, with a state or federally chartered bank in California as the escrow agent. Escrow instructions shall conform to the requirements of Public Contract Code Section 22300.

Questions regarding the type of work required, or requests for plans and specifications may be addressed to the following: **Grace Martin** gemartin@geiconsultants.com

This project is being funded in part by State and Federal grants as follows:

a. The Proposition 1 Water Quality, Supply, and Infrastructure Improvement Agricultural Water Use Efficiency Program, which is being administered by the California Department of Water Resources (DWR).

b. WaterSMART: Agricultural Water Use Efficiency Grants (2016 & 2017) administered by the Bureau of Reclamation (Reclamation).

The Contractor, its Subcontractors and Suppliers will be required to comply with all applicable State and Federal requirements.

Date: January 10, 2020

North Kern Water Storage District
By: s/s Richard Diamond
General Manager

"END OF SECTION"

January 10, 13, 20, 27, 2020
14684254

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INVOICE

DATE	NUMBER
07/24/19	961392

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Time: 10:37:22

BILL TO

GEI Consultants, Inc.
5001 California Ave., Ste 120
Bakersfield CA 93309

SHIP TO

GEI Consultants, Inc.
5001 California Ave., Ste 120
Bakersfield CA 93309

(661)327-7601
Ordered by: MARTIN GRACE

Job name: VELO BOUND BOOK ORDE

TERMS: Net 30 days

CUSTOMER P.O.	SHIPPED VIA	ACCOUNT #	ORDER #	SALESPERSON	ORDER DATE
	Delivery	03109	898916	Maria	07/24/19

ORDERED	SHIPPED	B O	UNIT	ITEM NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
1	1		EACH	BPS-1	PICKUP/DELIVERY BASE CHARGE	8.75	8.75
402	402		EACH	BPS-3015	DOUBLE SIDED 8.5X11 3 copies of 134 originals	0.13	52.26
9	9		EACH	BPS-3016	DOUBLE SIDED COLORED 8.5X11 3 copies of 3 originals	0.14	1.26
27	27		EACH	BPS-4011	COLOR DOUBLE SIDED 8.5X11 3 copies of 9 originals	1.12	30.24
6	6		EACH	BPS-3154	CLEAR COVER 8.5X11	1.25	7.50
3	3		EACH	BPS-3150	NON-PRINTED COVER 8.5X11	0.30	0.90
3	3		EACH	BPS-3152	PRINTED COVER 8.5X11	0.60	1.80
315	315		EACH	BPS-4016	COLOR 11X17 3 copies of 105 originals	1.17	368.55
6	6		EACH	BPS-3156	CLEAR COVER 11X17	1.90	11.40
6	6		EACH	BPS-4020	COLOR COVER STOCK 11X17	1.35	8.10

THANK YOU FOR YOUR ORDER

Sale amount	490.76
Tax	40.49
Balance due	531.25

SIGNED BY: _____

We accept major credit cards

The Purchaser Agrees to Pay a FINANCE CHARGE OF 1.5% PER MONTH which is an ANNUAL PERCENTAGE RATE OF 18%, if not Paid when Due, and all costs of Collection, including a Reasonable Attorney's Fee. Not responsible for jobs, prints or originals left over 60 days.

FEE SCHEDULE

Personnel Category	*Hourly Billing Rate* $ per hour
Staff Professional – Grade 1	$ 123
Staff Professional – Grade 2	$ 135
Project Professional – Grade 3	$ 148
Project Professional – Grade 4	$ 166
Senior Professional – Grade 5	$ 196
Senior Professional – Grade 6	$ 223
Senior Professional – Grade 7	$ 265
Senior Consultant – Grade 8	$ 297
Senior Consultant – Grade 9	$ 362
Senior Principal – Grade 10	$ 362
Senior Drafter and Designer	$ 148
Drafter / Designer and Senior Technician	$ 135
Field Professional	$ 111
Technician, Word Processor, Administrative Staff	$ 110
Office Aide	$ 86

These rates are billed for both regular and overtime hours in all categories.
Rates will increase up to 5% annually, at GEI's option, for all contracts that extend beyond twelve (12) months after the date of the contract. Rates for Deposition and Testimony are increased 1.5 times.

OTHER PROJECT COSTS

Subconsultants, Subcontractors and Other Project Expenses - All costs for subconsultants, subcontractors and other project expenses will be billed at cost plus a 15% service charge. Examples of such expenses ordinarily charged to projects are subcontractors; subconsultants: chemical laboratory charges; rented or leased field and laboratory equipment; outside printing and reproduction; communications and mailing charges; reproduction expenses; shipping costs for samples and equipment; disposal of samples; rental vehicles; fares for travel on public carriers; special fees for insurance certificates, permits, licenses, etc.; fees for restoration of paving or land due to field exploration, etc.; state and local sales and use taxes and state taxes on GEI fees. The 15% service charge will not apply to GEI-owned equipment and vehicles or in-house reproduction expenses.

Field and Laboratory Equipment Billing Rates – GEI-owned field and laboratory equipment such as pumps, sampling equipment, monitoring instrumentation, field density equipment, portable gas chromatographs, etc. will be billed at a daily, weekly, or monthly rate, as needed for the project. Expendable supplies are billed at a unit rate.

Transportation and Subsistence - Automobile expenses for GEI or employee owned cars will be charged at the rate per mile set by the Internal Revenue Service for tax purposes plus tolls and parking charges or at a day rate negotiated for each project. When required for a project, four-wheel drive vehicles owned by GEI or the employees will be billed at a daily rate appropriate for those vehicles. Per diem living costs for personnel on assignment away from their home office will be negotiated for each project.

PAYMENT TERMS

Invoices will be submitted monthly or upon completion of a specified scope of service, as described in the accompanying contract (proposal, project, or agreement document that is signed and dated by GEI and CLIENT).

Payment is due upon receipt of the invoice. Interest will accrue at the rate of 1% of the invoice amount per month, for amounts that remain unpaid more than 30 days after the invoice date. All payments will be made by either check or electronic transfer to the address specified by GEI and will include reference to GEI's invoice number.