



WaterSMART Drought Response Program: Drought Resiliency Projects for FY 2020

BOR-DO-20-F002

Stanislaus Regional
Water Authority

Regional Surface Water Supply Distribution to Turlock

October 16, 2019



Table of Contents

Table of Contents	i
List of Figures	ii
List of Acronyms	ii
Section 1: Technical Proposal and Evaluation Criteria	1
1.1 EXECUTIVE SUMMARY	1
1.2 Background	1
1.2.1 Project Location	1
1.3 Technical Project Description and milestones	6
1.4 Performance Measures	8
1.5 EVALUATION CRITERIA	9
1.5.1 Evaluation Criterion A – Project Benefits	9
1.5.2 Evaluation Criterion B –Drought Planning and Preparedness	12
1.5.3 Evaluation Criterion C –Severity of Actual or Potential Drought Impacts	15
1.5.4 Evaluation Criterion D –Project Implementation	18
Implementation Plan, including estimated schedule.	18
Permits Required	18
Engineering and Design Worked Performed.	18
Describe any new policies or administrative actions required to implement the project.	18
1.5.5 Evaluation Criterion E ---Nexus to Reclamation	19
1.5.6 Evaluation Criterion F ---Department of the Interior Priorities	19
Section 2: Project Budget	21
2.1 Funding Plan and Letters of Commitment	21
2.2 Budget Proposal	22
2.3 Budget Narrative	23
Section 3: Environmental and Cultural Resources Compliance	27
Section 4: Letters of Support	31
Section 5: Required Permits or Approvals	32
Section 6: Official Resolution	32
Section 7: References	34
Appendix A	
Appendix B	

Appendix C
Appendix D
Appendix E.....

List of Figures

Location Map 2
Proposed Facilities 7

List of Acronyms

AF	Acre-feet
AFY	Acre-feet per year
BA	Biological Assessment
BMP	Best Management Practices
CEQA	California Environmental Quality Act
CIP	Capital Improvement Plan
CUWCC	California Urban Water Conservation Council
EPA	U.S. Environmental Protection Agency
IRWMP	Integrated Regional Water Management Plan
NEPA	National Environmental Policy Act
NOAA Fisheries	National Oceanic Administration, National Marine Fisheries
UWMP	Urban Water Management Plan

Section 1: Technical Proposal and Evaluation Criteria

1.1 EXECUTIVE SUMMARY

Date: October 16, 2019

Applicant: Stanislaus Regional Water Authority

Applicant City, County, State: Turlock, Stanislaus, CA

Project Location: Stanislaus County, CA

Project Name: Regional Surface Water Supply Distribution to Turlock

Project Duration: May 2020 – December 2022 (construction completion)

Estimated Project Completion (mm/yy): December 2022

Funding Group: Tier II

Project Summary:

The Stanislaus Regional Water Authority, a joint powers authority, proposes to complete the next phase of the Regional Surface Water Supply Project to construct a transmission main to the City of Turlock utilizing a previously constructed infiltration gallery to withdraw up to 11,201 acre-feet of water from the Tuolumne River and treated by the SRWA Water Treatment Facility. This project will provide long-term drought resiliency for the City of Turlock by providing a new source of water for the City and will allow natural recharge the Turlock Groundwater Basin, a Basin identified as a high priority basin by the California Department of Water Resources, by reducing demands on groundwater supply.

The proposed project is not located on a Federal Facility.

1.2 Background

The Stanislaus Regional Water Authority (SRWA) is a Joint Powers Authority (JPA), created in 2011 and made up of two agencies: The City of Ceres (Ceres) and the City of Turlock (Turlock), in cooperation with Turlock Irrigation District (TID). Both Ceres and Turlock (the Cities) are currently reliant solely on groundwater for supplying portable water to their communities, however, groundwater is becoming more unreliable due to drought, over-use, and more stringent water quality regulations. Therefore, the SRWA was formed to develop the Regional Surface Water Supply Project (Project) to bring a diversified and sustainable water supply to the Cities.

1.2.1 Project Location

The Turlock transmission main will begin at the SRWA Water Treatment Plant located on APN 018-006-013 in Stanislaus County, a short distance east of Geer Road and south of the Tuolumne River. Figure 1 shows the location of the water treatment plant and the city. The latitude and longitude coordinates for the new transmission main are noted in the table below, and shape files have been provided separately in a zip file.

Location along Turlock FWTM	Approximate Latitude (NAD 1983, decimal degrees)	Approximate Longitude (NAD 1983, decimal degrees)
Water Treatment Plant	37.617	-120.840
Turlock Terminal Storage Reservoir	37.525	-120.817

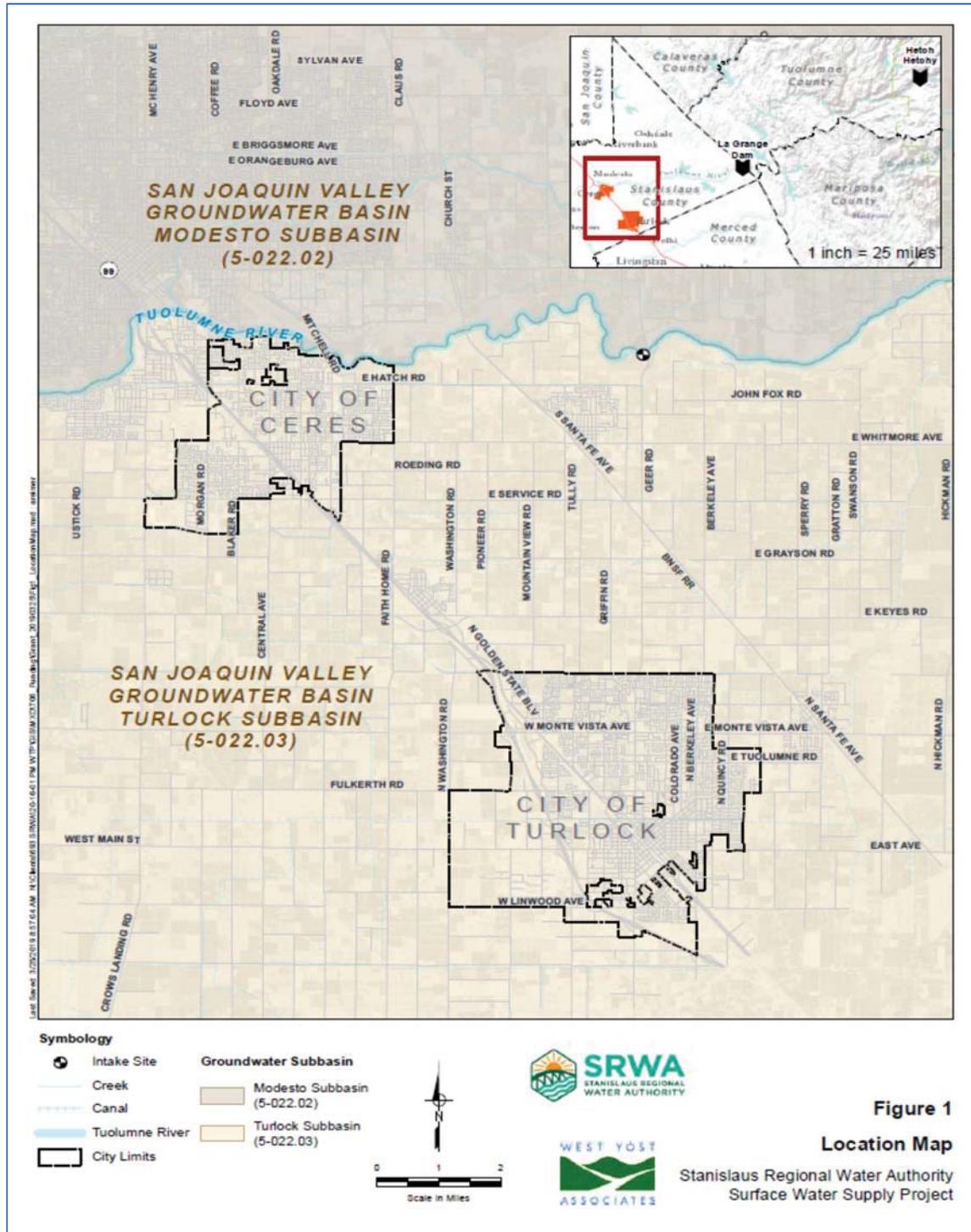


Figure 1
Location Map

Stanislaus Regional Water Authority
Surface Water Supply Project

1.2.2 Turlock Subbasin

As defined in Department of Water Resources (DWR) Bulletin 118 (2003), the Turlock Subbasin is a portion of the San Joaquin Valley Groundwater Basin. The San Joaquin Valley is bounded on the west by the Coast Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada Foothills and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. Drainage within the San Joaquin Valley flows in two directions. The northern portion of the valley drains toward the Delta by the San Joaquin River and its tributaries, the Fresno, Merced, Tuolumne, and Stanislaus rivers. The southern portion of the valley is internally drained by the Kings, Kaweah, Tulare, and Kern rivers that flow into the Tulare drainage basin, including the beds of the former Tulare, Buena Vista, and Kern lakes.

The Turlock Subbasin lies within the eastern portion of Stanislaus and Merced counties and covers approximately 347,000 acres or 542 square miles. The Subbasin is situated between the Tuolumne and Merced rivers and is bounded on the west by the San Joaquin River and on the east by crystalline basement rock of the Sierra Nevada foothills. The Subbasin's northern, western, and southern boundaries are shared with the Modesto, Delta-Mendota, and Merced Groundwater subbasins, respectively.

The communities of Ceres, Delhi, Denair, Hickman, Hilmar, Hughson, Keyes, south Modesto, and Turlock pump, collectively, from approximately 75 wells. The average pumping from municipal wells was about 44,000 AF/yr during the 1997 through 2006 period. The annual pumping for municipal wells for each community from 1952 to 2006. As urban development continues, the demands upon groundwater supplies will increase unless alternative supplies are considered.

There are an estimated 3,700 residences within the Turlock Basin that are not connected to a municipal water system that pump groundwater for domestic supply. The average pumping rural residential areas averaged 4,000 AF/yr between 1997 and 2006.

1.2.2 City of Turlock

The City of Turlock is located in one of the most productive agricultural regions in the world in the heart of Stanislaus County, approximately 100 miles east of the San Francisco Bay Area along California State Highway 99, with Sacramento to the north, and Fresno and Bakersfield to the south. The City and water service area encompass approximately 20 square miles, with the exception of three small residential areas served by groundwater from the City of Modesto. The climate is Mediterranean-like with hot, dry summers and cold, wet winters. The average annual precipitation is approximately 11.9 inches of rainfall (2015 Turlock UWMP).

Turlock serves water to a population of over 70,000 residents. Turlock currently obtains its water supply entirely from groundwater extracted from 19 active potable water wells, three of which are under a compliance order due to TCP from the Division of Drinking Water, and four non-potable water wells for irrigation only. The City has inactivated three wells due to water quality concerns. All wells will be equipped with chlorination systems to provide chlorine residual before distribution. The City has three ground-level storage tanks, a combined storage capacity of approximately 3 million gallons and approximately 250 miles of pipelines ranging in diameter from 6 to 16 inches.

1.2.3 Turlock Irrigation District (TID or District)

TID provides irrigation water to agricultural lands in Stanislaus and Merced counties in the Central Valley of California. TID was formed on June 6, 1887 and was the first irrigation district formed in California under the Wright Act. At the time of its formation, TID covered 179,527 acres. TID presently covers a service area of 197,261 gross acres, with 157,800 acres that can currently be irrigated with surface water (i.e. the acreage that could be served by active irrigation service connections). The actual number of acres that irrigate each year varies depending on the decisions of the individual property owners.

The increase in gross acreage from the time of District formation is attributed to the annexation of adjacent lands including Turlock Lake, the community of Delhi, and a portion of Don Pedro Reservoir.

TID's irrigation service area is generally bounded on the north by the Tuolumne River, on the south by the Merced River and on the west by the San Joaquin River. The communities of Ceres, Turlock, Keyes, Denair, Hughson, Delhi, South Modesto, Hickman, and Hilmar are within the boundaries of the TID irrigation service area.

The Tuolumne River provides the principal water supply for TID. Don Pedro Reservoir is located on the Tuolumne River and is TID's principal storage reservoir, with a total capacity of 2,030,000 acre-feet (AF). Don Pedro Reservoir is jointly owned by TID and MID (68.46 % TID and 31.54 percent MID). TID operates the reservoir for the districts. TID's responsibility for water delivery stops at the canal or lateral sidegate. The Growers are responsible for the construction and maintenance of facilities to transport the water from the TID canal to their land. Improvement Districts (IDs) are formed to allow groups of growers to pool resources to construct, operate and maintain irrigation facilities including ditches, pipes, wells, drip/micro systems, and surface and subsurface drainage facilities.

The water rights for the Tuolumne River are held in majority by TID. The raw water infiltration gallery, raw water pump station and pipeline that will be used to extract water from Tuolumne River is owned by TID. Construction of these facilities is not included in the scope of this application; however, it provides context for the relationship between TID and the cities of Ceres and Turlock.

Identify potential shortfalls in water supply and/or provide info on reductions in supply under historical drought conditions.

The Cities overlie the San Joaquin groundwater basin and the Turlock Sub-Basin. Groundwater supplies south of the Tuolumne River serve an urban and agricultural demand, which has led to significant levels of groundwater overdraft in the region. The Turlock Sub-Basin was categorized as high priority in the 2014 prioritization rankings of groundwater basins. The high priority designation was based primarily on the amount of irrigated land in the Sub-Basin and estimated groundwater use. The groundwater basin also has several areas of concern related to contamination from nitrates, arsenic, and 1,2,3-Trichloropropane, a newly regulated contaminate.

The Tuolumne River flows 149 miles from the Sierra Nevada Mountains to the San Joaquin River in the Central Valley. The River drains a watershed of nearly 2,000 square miles and a significant amount of its flow constitutes melted snowpack. The River is dammed in three locations: 1) O'Shaughnessy Dam forming the Hetch Hetchy Reservoir, high in the Sierra Nevada that supplies potable water to the City of San Francisco through an aqueduct; 2) New Don Pedro Dam that provides hydroelectric power and water

supply storage for TID and Modesto Irrigation District (MID); and 3) La Grange Dam, just downstream of Lake Don Pedro, that diverts irrigation supply to TID and MID.

The recent drought significantly reduced surface water supply in the Tuolumne River. The San Joaquin 60-20-20 Index, which is used to establish flow requirements at the Vernalis stream flow gaging station on the San Joaquin River, classifies year types based on estimated unimpaired flow for four rivers: the Stanislaus River below Goodwin Reservoir, Tuolumne River below La Grange, Merced River below Merced Falls, and San Joaquin River inflow to Millerton Lake. The average water index, calculated from 1901 through 2015, is 3.29 million acre-feet/year (MAFY), with 2013, 2014, and 2015 all classified as critically dry years, and the 2015 index of 0.91 MAFY the lowest in historical record. During 2014, TID has agricultural delivery reductions of 58 percent and during 2015, TID has agricultural delivery reductions of 62 percent.

Recent drought conditions reemphasize the importance of recharge from surface water supplies for the Turlock Groundwater Basin to achieve sustainability, as envisioned by the recent enactment of the Sustainable Groundwater Management Act of 2014 (SGMA). Analysis shows that seepage and deep percolation of a portion of TID's surface water supply serves as the primary source of recharge to the groundwater system. Thus, while groundwater provides a significant portion of the water used by the District and communities including the cities of Ceres and Turlock within the Turlock Groundwater Basin, the role of the conjunctive use system will be to utilize surface water supplies to the maximum extent possible, when water is readily available, and rely more on groundwater in periods of drought. This water management strategy will allow the groundwater basin to recharge, increasing the amount of water available to the other communities that are 100% reliant upon the groundwater supply.

There are currently no groundwater pumping restrictions; however, under SGMA a groundwater sustainability plan is required which will include pumping restrictions. This plan is in development and expected to be completed in 2022. In anticipation of implementation of the groundwater water sustainability plan, the SRWA is proactively implementing the surface water supply project and distribution to provide flexibility in water supplies to create resiliency from drought conditions and if future groundwater quality issues restricted the available of groundwater supplies.

Identify any past working relationships with Reclamation, dates, description of the relationship, and a description of the project.

SRWA was recently awarded a Drought Resiliency Project grant for funding to assist with the construction of the water treatment plant and the construction of a transmission main to the City of Ceres. The scope of work for this funding agreement is expected to begin in January 2020.

Additionally, both cities (Ceres and Turlock) are participating in the North Valley Regional Recycled Water Project, which will deliver recycled water from both cities to drought-stricken farmers in the westside of Stanislaus county. The North Valley partnership is the largest recycled water conveyance project in the country and the first water project for the U.S. Bureau of Reclamation as the owner and operator of the Delta-Mendota Canal. When complete, this project will convey 59,000 acre-feet of recycled water through the construction of a pump station and pipelines to the Delta-Mendota Canal for agricultural use by Del Puerto Water District and for wildlife refuges by the U.S. Bureau of Reclamation.

1.3 Technical Project Description and milestones

Describe the work to be completed in detail, including specific activities that will be accomplished.

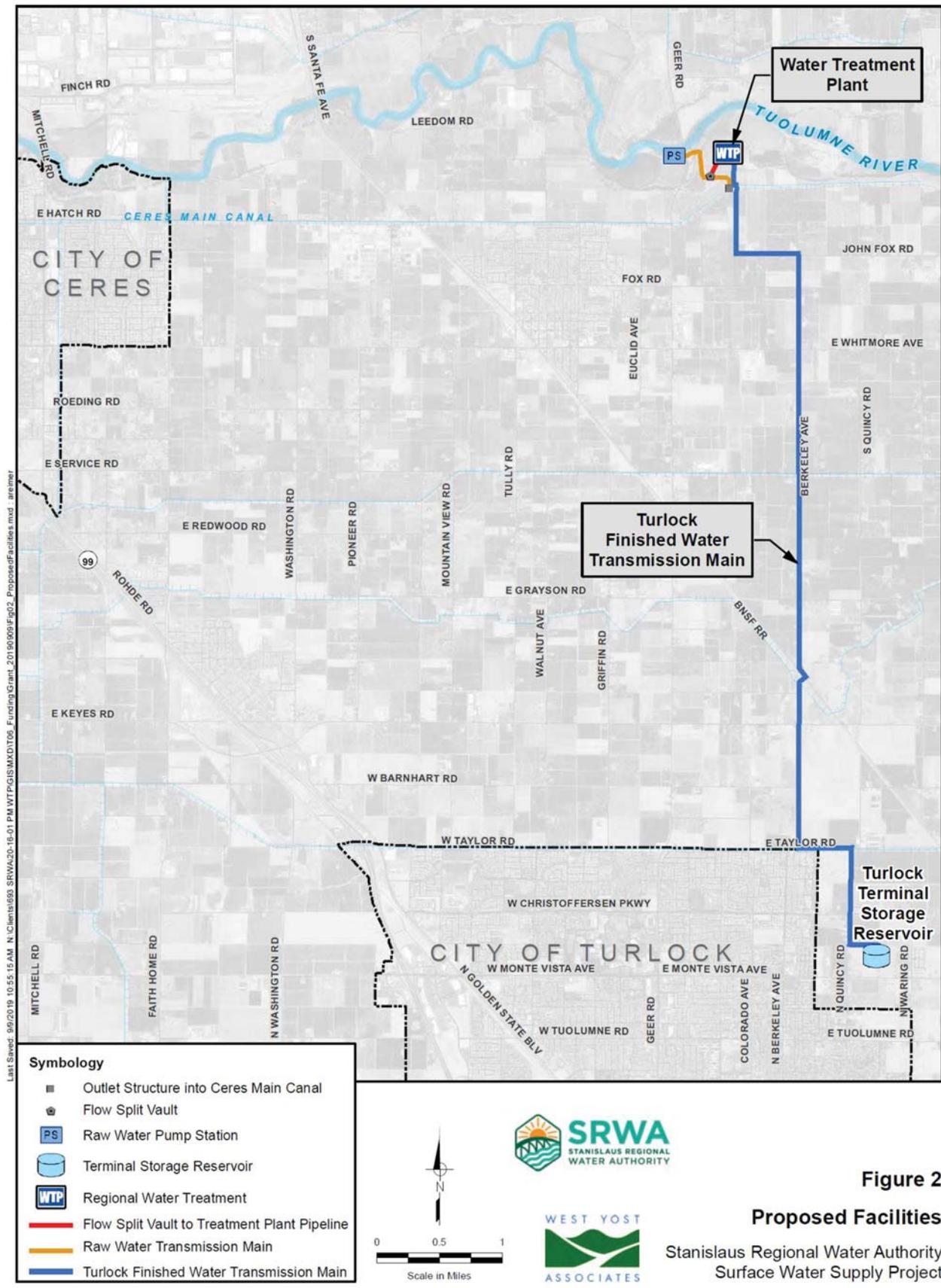
The SRWA is proposing to construct a new transmission main to provide a new, supplemental drinking water supply to the city of Turlock. The sole drinking water supply for the city has historically been groundwater. The proposed supplemental source water for the City of Turlock will originate from the SRWA water treatment plant, which will treat water from the Tuolumne River, at a location near the City of Hughson.

Reclamation grant funds will be used towards the cost to build the 42" diameter by approximately 7 miles long transmission main that will convey treated water from the new WTP to the City of Turlock. SRWA intends to design and construct the Turlock transmission main under a pending Design-Build (DB) agreement that was procured through a public, competitive process for the construction of the water treatment plant, the raw water transmission main and pump station, the transmission main to the City of Ceres, and the transmission main to the City of Turlock. See the Proposed Facilities for the location of the water treatment plant and Turlock transmission pipeline on the following page.

The WTP will utilize a conventional treatment process featuring sedimentation/flocculation, primary ozone disinfection, and granular media filtration. The WTP initial capacity will be 15 million gallons per day (mgd), with 5 mgd allocated to Ceres and 10 mgd allocated to Turlock.

Work occurring prior to this transmission main to the City of Turlock includes: a wet well that is currently under construction at the infiltration gallery and will be completed in 2020 and the construction of the water treatment plant, anticipated to be completed in September 2022, and water distribution to begin within 60 days of construction completion. This estimated timeline includes startup testing and adjustments prior to delivery of water to the City of Turlock.

The Turlock Finished Water Transmission Main alignment will connect the water treatment plant to a city-owned terminal storage tank to be constructed on North Quincy Road separately by the City prior to the completion of this proposed scope of work. The transmission main will be 42-inches in diameter and approximately 7 miles long and will initially convey up to 10 mgd of surface water to Turlock, depending on water supply demands and storage available. The pipeline capacity is 30 mgd, designed to support full buildout of the City of Turlock. The transmission main will be constructed primarily along Berkley Avenue as shown in Figure 2.



A draft master schedule for the WTP and Turlock Finished Water Transmission Main schedule has been developed, but revisions are expected upon execution of the design-build contract to design and construct the WTP and Turlock Finished Water Transmission Main. Bids from qualified design-build contractors have been received and are under review. Contract execution is anticipated within the next couple of months.

Table 1. Regional Project Schedule Major Milestone Summary		
Milestone/Activity	Actual or Planned Start Date	Planned Completion Date
Environmental Permits Process	Oct 2016	Jan 2020
Property Acquisition	Feb 2017	April 2020
TID Water Rights Modification	Feb 2018	Dec 2019
Issue RFQ to Interested DB Teams	Completed Aug 2018	
Issue RFP to short-listed DB Teams	Completed Dec. 2018	
DB Contract Award	Nov 2019	Dec 2019
SRF Funding Agreement	Jan 2020	Mar 2020
WTP Design and Construction (Separate scope of work)	Dec 2019	May 2022
City of Turlock Finished Water Transmission Main Design and Construction	May 2020	Sept 2022
Water Quality Testing and Initiate Operations/Delivery of Water	Sept 2022	Dec 2022

1.4 Performance Measures

Describe how you are going to estimate the amount of water recharging the groundwater.

The City has monitoring wells that will allow them to determine the amount of groundwater recharge after project implementation. For compliance with the SGMA, and to demonstrate benefits to the groundwater basin, the City will monitor groundwater levels at regular intervals.

The City of Turlock will receive better quality water from the WTP than they currently obtain from their groundwater-only supplies. Operation of a conjunctive use system will allow the city to rely only on those wells that consistently provide good quality groundwater and this water will be mixed with high-quality surface water supplies. Surface water will provide decreased hardness and mineral content in both delivered drinking water and in wastewater effluent discharges. The improved water quality will be monitored in compliance with state drinking water requirements and will be reported annually to customers.

Describe how you are going to estimate ecological benefits.

The Project will provide additional discharges in the upper Tuolumne River in the 26 mile stretch between La Grange Dam and the infiltration gallery where water will be withdrawn for treatment and delivery to the two Cities. This reach of the Tuolumne River is known to be a spawning area for Salmon, therefore, it is expected that the additional water in this reach of the Tuolumne River will benefit the aquatic species by withdrawing approximately 24 cfs (10,770 gpm) in addition to the minimum flows required by FERC from

the River under this Project Phase, resulting in net increased flows in the Tuolumne River between Don Pedro Reservoir and the infiltration gallery.

Extensive monitoring of fish populations has been ongoing in the lower Tuolumne River for several decades. Seine surveys and rotary screw trap sampling have been conducted at multiple locations since 1986 and 1995, respectively, with sampling near the project area occurring at Waterford (RM 29.8) since 2006 (Stillwater Sciences 2012). Monitoring at the Tuolumne River Weir at RM 24.5, 1.5 miles downstream of the infiltration gallery, began in fall 2009 (FishBio 2016). During monitoring in 2015, at the Tuolumne River Weir, fall-run adult Chinook salmon were documented, but no steelhead.

Water temperature is an important factor controlling egg incubation rates, as well as juvenile and adult growth rates. Egg incubation requires temperatures less than 55 degrees Fahrenheit (°F) (13 degrees Celsius [°C]), temperatures suitable for early juvenile rearing need to remain below 61°F, and the smoltification process is inhibited for Chinook at temperatures above 59°F and for steelhead above 57°F. Spawning salmon are assumed to avoid locations with a water temperature above 60°F (16°C). Warm water temperatures can decrease dissolved oxygen in the water, can act as a barrier to migration, decrease egg hatchability, decrease the survival of fry once they emerge from the eggs, and impair or reverse the physiological function of smoltification. (SRWA Source Water Supply Project Environmental Impact Report, 2018)

The additional water released and the temperature in the Tuolumne River will be monitored and tracked.

1.5 EVALUATION CRITERIA

1.5.1 Evaluation Criterion A – Project Benefits

Please describe how the proposed project will improve drought resiliency, including:

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

TID is petitioning for approval of a long-term water transfer under Water Code section 1735, which includes a point of diversion and adding purposes of use to TID's share of License 11058 in order to transfer up to a total of 17,375 AF annually to the SRWA for municipal and industrial uses. This petition was submitted to the California State Water Resources Control Board Division of Water Rights on June 29, 2018 and amended in October 2018. This petition for change to the TID water rights is to implement the 2015 Water Sales Agreement between TID and the Stanislaus Regional Water Authority and related aspects of the SRWA Regional Surface Water Supply Project. TID is proposing a long-term water transfer to SRWA through July 28, 2065 under its share of License 11058.

For this phase, an initial quantity of up to 11,201 AF of water will be treated and distributed to the City of Turlock, depending on water demands and storage capacity.

- **Will the project make additional water supplies available? Yes**
 - **If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated?**

17,375 AF/year will be available to both cities once the WTP and the transmission pipelines to both communities are completed. The scope of this Phase is limited to the transmission pipeline to the City of Turlock with a design capacity of 33,600 acre-feet. The estimated quantity of additional supply the Project will initially provide is 11,201 AFY, because the City of Turlock' current water demands, and available groundwater supply does not necessitate the full allotment. The future supply of 30,000 AF/year is identified in the 2015 Water Sales Agreement executed between the SRWA and TID and will require a WTP expansion to utilize the full allocation of water in the future. The capacity of the transmission main to the City is over 33,600 acre-feet of water annually, providing significant resiliency well into the future as the community grows or if groundwater supplies and/or water quality continue to diminish due to climate change and cyclical droughts.

- **What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?** The City of Turlock is currently 100 percent reliant on groundwater for its water supply. In 2015, 17,000 AF of water was pumped and distributed for municipal and industrial use (drought year restrictions); and in 2017 18,500 AF was pumped and distributed. The 2017 groundwater quantity pumped represents a more normal year versus 2015 which was a dry year. 11,201 AF equals 60% percent of the City's annual water supply use.

Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies. This project would significantly improve water management of groundwater resources and provide long-term drought resiliency by allowing for conjunctive reuse. This is important because the West Turlock Subbasin provides water for the cities of Ceres, Hughson, Modesto, Turlock, Waterford, and the unincorporated areas served by Delhi County Water District, Denair Community Services District, Hilmar County Water District, Keyes Community Services District, Stanislaus County, and Merced County. All of which are dependent on groundwater for their water supply.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)? As a conjunctive use project, this new source of surface water will supplement existing groundwater supplies and be used to the maximum extent when surface supplies are available under the TID transfer to reduce the water quantity drawn from the aquifer. Reduced groundwater pumping allows the groundwater levels to recover naturally. In drought years, the groundwater basin will be relied upon to meet demand not supplied through the surface water source.

Treated surface water may be made available to neighboring communities via planned interconnections with the City of Turlock finished water pipeline to enable a larger conjunctive use program across the groundwater basin municipal and industrial service area.

- **If so, how will the project increase efficiency or operational flexibility?** The City will be able to use this new, surface water supply to augment and blend with groundwater supplies to reduce contaminant levels, reducing treatment necessary to deliver quality drinking water that meets or exceeds drinking water standards. The City will have the flexibility to reduce groundwater dependence which leads to reversing basin overdraft conditions. Additionally, the water sales agreement with TID also stipulates

that the City provide 2,000 AF of recycled water each and every year to TID to reduce the impact of the project on TID irrigation supplies.

- **What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated?** Groundwater pumped for municipal and industrial use was 18,500 AFY in 2017. The new surface supply of 11,201 AFY will immediately replace, to the extent possible through the City's water distribution system, an equivalent amount of demand currently met through groundwater pumping. This new surface supply will provide the opportunity to more efficiently manage up to the current groundwater pumping capacity, plus the 11,201 AFY of water from this project, for a total of 29,701 AF of water better managed. In addition, the Tuolumne River will also benefit the anadromous fish in the river by changing the diversion point for the water and allow for more instream flows benefitting habitat. The groundwater basin will also benefit from additional percolation from the use of the surface water in the city for municipal water distribution. This additional percolation has the potential to lead to better groundwater quality.

- **Provide a brief qualitative description of the degree/significance of anticipated water management benefits.** The City will be able to optimize the use of their groundwater production wells that supply the highest quality water, decreasing the amount of treatment required on their lower quality supply wells. The high-quality treated surface water will be blended with groundwater in the City's distribution system to provide water quality meeting or exceeding State drinking water quality regulations. Other cities in the area that have transitioned from a groundwater only supply to a conjunctive supply of surface water and groundwater have seen a significant increase in groundwater levels. A similar benefit to groundwater levels is expected as a result of this Project.

- **Will the project make new information available to water managers? If so, what is that information and how will it improve water management?** The City will have access to water treatment production and finished water quality information from the WTP on a continual basis to allow City water managers to manage reservoir storage levels and balance groundwater well production to meet customer demand. This information will help water managers maximize the use of surface water and minimize groundwater pumping to the greatest extent possible. Also, this real-time data will allow the water managers to optimize distribution system chemical use for public health purposes.

- **What are the types and quantities of environmental benefits provided, such as the types of species and their numbers benefited, acreage of habitat improved, restored or protected, or the amount of flow provided? How was this estimate calculated?** Releasing water from La Grange Dam and diverting the water 26 miles downstream on the Tuolumne River will allow that water to pass through critical spawning and rearing reaches of the river. In this manner, water used for urban supplies would also provide significant environmental benefits to Chinook salmon and other Tuolumne River fish habitat.

- **What is the status of the species of interest (i.e. endangered, threatened, etc.)? How has the drought impact the species?** Central Valley Spring-run Chinook salmon are considered a threatened species. During times of drought, the temperatures in the water increase, which creates a less favorable habitat for spawning. Thus, reducing the number of Chinook. If this condition

persists, the Chinook could change status from threatened to endangered and more stringent actions taken on the Tuolumne River may be imposed, which could impact water supplies.

- **If the proposed project will benefit federally listed threatened or endangered species, please consider the following elements:**
- **Is the species subject to a recovery plan or conservation plan under the ESA?**
There is not a recovery or conservation that specifically covers the Tuolumne River.
- **What is the relationship of the species to water supply?**
An increased flow upstream of the infiltration gallery will increase spawning habitat for Chinook and O. mykiss. The additional water released into the reach downstream of the La Grange Dam will help reduce high fall weather temperatures that may be stressful for spawning Chinook and would increase habitat suitability.
- **What is the extent of the proposed project that would reduce the likelihood of listing, or would otherwise improve the status of the species?**
By improving the water temperature in the river, the Chinook will be able to increase spawning, thereby improving the status of the species.
- **Is the species adversely affected by a Reclamation project?**
Not applicable.

1.5.2 Evaluation Criterion B –Drought Planning and Preparedness

Explain how the applicable plan addresses drought.

Two local plans and one regional plan address drought. These plans are the Turlock Irrigation District 2015 Agricultural Water Management Plan which includes a Drought Management Plan, the City of Turlock 2015 Urban Water Management Plan, and the 2018 East Stanislaus Integrated Regional Water Management Plan.

The Turlock Irrigation District prepared a *Drought Management Plan in 2015* in response to Governor Brown's Executive Order B-29-15, mandating agricultural water suppliers include a detailed Drought Management Plan (DMP) describing actions and measures taken to manage water demand during drought. The DMP is included in *Appendix G* of the District's *2015 Agricultural Water Management Plan* and attached in Appendix D herein, describes a broad range of actions undertaken during drought to manage available water supplies and meet customer demands to the maximum extent possible and builds upon existing shortage allocations policies adopted by TID for drought conditions. In addition, the DMP includes components recommended by the California Department of Water Resources in its *Agricultural Water Management Plan Guidebook*. The DMP combines long-standing shortage allocations and describes actions taken under various drought conditions, including:

- Monitoring of Hydrologic Conditions to Assess Available Supply and Drought Severity
- Declaration of Water Shortage and Implementation of Drought Policies
- Operational Modifications to Increase Operational Efficiency

- Demand Management Actions
- Alternative and Additional Water Supplies
- Stages of Action
- Coordination and Collaboration
- Expenditures and Revenues

The Drought Management Plan includes long-term steps to improve infrastructure and institute updated operational strategies to further improve operational efficiency.

The *City of Turlock 2015 Urban Water Management Plan (UWMP)* discusses the potential impacts on the Turlock Sub-basin groundwater briefly in Chapter 6 and identifies the surface water agreement with TID and SRWA as a mitigating measure for impacts to the groundwater to address climate change related impacts leading to longer drought cycles. In Chapter 7, a water supply reliability assessment describes the long-term reliability and vulnerability of the City's water supplies and in Chapter 8, reliability planning is addressed.

The *2018 East Stanislaus Integrated Regional Water Management Plan* is a collaborative effort to manage all aspects of water resources in the region. In this plan, Chapter 3 addresses planning for and adapting to anticipated changes in climate to ensure water supply reliability.

Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process? TID coordinates and collaborates extensively with others to coordinate operations in all years. The District participates in and cooperates with the Stanislaus County Drought Task Force and the State Office of Emergency Services to respond to local drought emergencies. The District reports data to the California Energy Commission, the California Department of Water Resources, and other governmental entities as necessary. The District works with the City and County of San Francisco and the Modesto Irrigation District regarding Tuolumne River water supplies and demands including instream flows, snowpack, agricultural and urban demands, climate change, and other considerations. The District participates in the Turlock Groundwater Basin Association (TGBA), the Stanislaus County Groundwater Technical Advisory Committee, and the newly formed Groundwater Sustainability Agencies (GSAs) - West Turlock Subbasin GSA and East Turlock Subbasin GSA regarding groundwater resources issues, such as groundwater level and quality monitoring, and public education and outreach. Through the state's Sustainable Groundwater Management Act (SGMA), the West and East Turlock Subbasin GSAs were formed after posting Notices of Public Hearing. The City of Turlock is a member of the West Turlock Subbasin GSA which, together with the East Turlock Subbasin GSA, is actively developing a Groundwater Sustainability Plan (GSP) for the entire Turlock Subbasin. This GSP process will include much public outreach and involvement through its completion in 2022. Additionally, the District meets with local cities and counties regarding groundwater resources, water conservation and recycling, and public education and outreach. The TGBA is comprised of the following local agencies: The Cities of Ceres, Hughson, Modesto, Turlock, and Waterford; Merced County, Stanislaus County, Hilmar County Water District, Merced Irrigation District, Eastside Water District, and the Keyes Community Services District.

The 2018 East Stanislaus IRWM Plan was created the Regional Water Management Group, with input from local stakeholders. The Regional Water Management Group consists of: Cities of Modesto, Ceres, Hughson, Turlock, and Waterford, and Stanislaus County. This plan identifies the following vulnerabilities: Water use vary by more than 50% seasonally and groundwater supplies in the region lack resiliency after drought events.

Does the drought plan include consideration of climate change impacts to water resources or drought? Yes, all of the plans discuss climate change impacts. The City of Turlock UWMP mentions the concerns with overdrafting the Turlock Sub-basin and that the development of a groundwater master plan is in progress. The Turlock Sub-basin is not an adjudicated groundwater basin, therefore, there are no defined legal pumping rights for the City or the other agencies and landowners that extract groundwater. This presents a potential serious problem with the long-term reliability of the groundwater quantity and quality.

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

This project is supported by multiple plans and named specifically in the 2015 Turlock Urban Water Management Plan in Chapters 7 and 8, and in the East Stanislaus Integrated Regional Water Management Plan as a high priority project.

Does the drought plan identify the proposed project as a potential mitigation or response action?

In Chapter 8, section 8.8.2 of the 2015 Turlock UWMP it states, "...the City does not yet maintain any treated water interties with other agencies. However, once the Regional Surface Water Supply Project is operational, the City will have access to the surface water from the Tuolumne River. The facilities of the Regional Surface Water Supply Project may supply emergency water to maintain normal distribution during a catastrophic supply interruption." Clearly, defining this project as a drought resiliency project that would likely allow the City to mitigate the potential impacts from a future drought.

Does the proposed project implement a goal or need identified in the drought plan?

Yes, as noted in all three plans, this project addresses the lack of resiliency the region currently has with respect to drought.

The project implements the following goals in the East Stanislaus IRWM Plan:

1. Water Supply Goal to protect existing water supplies and improve regional water supply reliability by promoting the use of groundwater conjunctive use to reduce overdrafting and by providing a variety of water supply sources.
2. Water Quality Goal to protect and improve water quality for beneficial uses consistent with regional interests in cooperation with local, state, and federal agencies and regional stakeholders.
3. Environmental Protection and Enhancement to protect the environmental resources of the Tuolumne River.

The project implements the goal of the TID Drought Management to obtain alternate and additional water supplies for SRWA.

Describe how the proposed project is prioritized in the referenced drought plan?

The project is listed, by name, as a high priority project in the 2018 East Stanislaus IRWM Plan, the 2015 Turlock Irrigation District Agricultural Management Plan, the TID Drought Management Plan (Appendix G), and the 2015 Turlock Urban Water Management Plan.

- A. 2018 East Stanislaus IRWM Plan – Section 2.2.1 Discusses possible future changes to the water supplies for the cities of Modesto, Turlock, Waterford, and Hughson, and other regional partners as members of the Groundwater Sustainability Agencies (GSAs), are poised to develop and construct projects to conjunctively manager surface and groundwater supplies in an effort to show sustainability ion for both the Modesto and Turlock Groundwater Subbasins. Conjunctive use is a noted priority, because groundwater management is a primary concern with new Sustainable Groundwater Management regulations on the horizon and climate change models indicating longer droughts and a shift in magnitude and time of snowmelt in the future. This project will be used in the conjunctive use planning for water supply demand management for the Turlock Subbasin.
- B. 2015 Turlock Irrigation District Agricultural Management Plan – Section 6.4.1 *Evaluate Supplier Policies to Allow More Flexible Deliveries and Storage* identifies coordination with the SRWA to evaluate the feasibility of using surface water from the Tuolumne River in conjunction with existing groundwater supplies to satisfy municipal and industrial water demand within the communities of Ceres, Turlock and south Modesto. This was completed using sophisticated groundwater and surface water models to support long term planning and management, which resulted in the execution of the Water Sales Agreement between the SRWA and TID.
- C. TID Drought Management Plan (Appendix G) –_A key aspect of TID’s drought management policy is conjunctive management of surface and groundwater supplies for forecasted consecutive dry years. Completion of this project will support conjunctive management of surface and groundwater supplies in coordination between the SRWA, City of Turlock, and TID to better manage water supplies in the region.
- D. 2015 City of Turlock Urban Water Management Plan – This project supports the City’s priority to implement water management tools for increasing the long term reliability for water supplies by providing an alternate water supply capable of providing 100% of the City’s annual potable water through 2030 and 90% of the projected water demand beyond 2030.

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

- **Describe the severity of the impacts that will be addressed by the project:**

Ceres, Turlock, and other municipalities in Stanislaus County within the TID service area south of the Tuolumne River meet their water supply needs exclusively through the use of groundwater. In recent decades, Ceres and Turlock have experienced water quality problems and water supply limitations with their groundwater systems as a result of the recent 6-year drought of 2011-2017.

Underscoring the seriousness of the drought, on January 17, 2014, California Governor Edmund G. Brown Jr. declared a State of Emergency and directed state officials to take all necessary actions to prepare for the drought conditions and called upon every Californian to conserve water. As water supplies continued to diminish, the Governor’s office called on all water agencies to implement drought measures to reduce water

demands and the Department of Water Resources reduced State Water Project (SWP) allocations for southern California contractors to zero on January 31, 2014, and then 5% for 2014. Water resources remained very low throughout the entire State with DWR restricting SWP suppliers to 15-20 percent of their requested allotments until the drought ended in April of 2017. While the SRWA and the City of Turlock do not receive State Project Water, this declaration increased awareness of this issue.

A study by UCLA and the University of Houston reveals significant groundwater loss in California's Central Valley. Researchers tracked net groundwater consumption in the Central Valley from 2002 to 2016, which included two droughts, one from 2007 to 2009 and the more serious drought from 2011 to 2017. During the two drought periods, a total of 1.34 million AF and 32.43 million AF of water was lost, respectively, according to the study published in Geophysical Research Letters. For perspective, the amount of material associated with the 1980 eruption of Mount St. Helens was about one cubic kilometer, according to Dennis Lettenmaier, UCLA professor of geography. (UCLA: ScienceDaily-2017)

Subsistence is an additional concern, because as water tables lower, the soil compacts, pumping costs increase, and therefore tilling and irrigating the soil becomes more challenging. These challenges lead to less productive farmland and/or more expensive crops.

- **What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts?** Potential drought impacts if the proposed project were not implemented include, overdrafting of the groundwater basin, worsening groundwater quality, and reduced availability of water for agriculture use.
- **Public health concerns or social concerns associated with current or potential drought conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?)**

The City of Turlock currently relies on groundwater as the sole source of drinking water. Some of this groundwater contains contaminants that require well-head treatment to remove these impurities prior to use, making it harder and more expensive to continue to use groundwater exclusively as a source of drinking water. As groundwater treatment standards become even more stringent, well-head treatment costs, and costs for new replacement municipal wells will continue to increase. The surface water supplied by this project will help by providing a supplemental supply to groundwater, which introduces conjunctive use opportunities and provides a sustainable water supply. Furthermore, the need for this project has grown more urgent as DWR identified the Turlock groundwater sub-basin as a high priority basin under SGMA.

If during a drought the groundwater level lowered below the depth of the well and/or the water quality declined due to increased concentrations of contaminants, the City could be at risk of a service interruption if this project is not completed.

Whether there are ongoing, past or potential, local, or economic losses associated with current drought conditions. Past and potential future losses associated with drought conditions include loss of

agricultural crops, business loss of revenue, and reduced real estate values if sustainable and reliable water supplies cannot be provided.

In Stanislaus County, agricultural sales were \$4.4 billion in 2014, and dropped to \$3.8 billion in 2015---a 12% decrease possibly due to finishing the fourth year of drought. This sector and its related industry accounts for \$13 billion in the county's local economy or \$35 million per day. One in four jobs are tied directly to agriculture or is related to food manufacturing making this county significantly dependent upon a resilient water supply.

245,000 acres of the Turlock Subbasin is covered with irrigated crops; this represents 70 percent of the subbasin area. Groundwater and surface water resources within the Turlock Groundwater Basin are vitally important resources.

Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict). The Turlock Subbasin serves as the primary and/or sole source of water for the communities of Ceres, Delhi, Denair, Hickman, Hilmar, Hughson, Keyes, south Modesto, and Turlock. These communities pump, collectively, from approximately 75 wells. The average pumping from municipal wells was about 44,000 AF/yr during the 1997 through 2006 period. As urban development continues, the demands upon groundwater supplies will increase unless alternative supplies are considered. If additional/alternative water supply sources are not secured and drought cycles continue to slow the recharge of the groundwater basin, conflict and/or a water-related crisis is quite possible.

- **Describe existing or potential drought conditions in the project area.**

Nearly the entire state experienced varying levels of decline in available water supplies during the most recent drought from 2011-2017; however, this drought due to area of impact and degree, is on record as the driest period in California history. Other periods of past drought cycles for the county include 1976-1977 and 1987-1992.

During this most recent drought, several residents in Tulare, California, another central California area, experienced a sustained water outage when their wells ran dry. It is important that steps be taken before the next drought to provide resiliency against such an interruption in water services.

- **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 experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).**

No, the area is not currently impacted by a drought. However, a 6-year drought recently ended in April of 2017. Despite not being in a drought, the City of Turlock is currently maintaining a Stage II water restriction policy to limit the potential for customers to return to their pre-drought water use levels.

- **Describe any projected increases to the severity or duration of drought in the project area resulting from climate change. Provide support for your response (e.g., reference a recent climate change analysis, if available).**

According to the fourth edition of the California *Climate Change Assessment, San Joaquin Valley Region Report Preview*¹, the periods of drought will occur more frequently and be more intense as temperatures increase. Additional climate change impacts include more severe and frequent wildfires too. These impacts are likely to increase stresses to: agriculture, water resources, public health and climate justice.

These data support the need for securing alternate water supplies to support resiliency against such drought periods and the proposed Regional Surface Water Supply Project achieves that purpose.

1.5.4 Evaluation Criterion D –Project Implementation

Implementation Plan, including estimated schedule.

The SRWA Regional Surface Water Supply Project is currently in the design phase. The project is being administered via the Design-Build procurement method as allowed by public contract code 22160. Three short-listed design-build entities (DB teams) have responded to a Request for Proposals. Their proposals reviewed, interviews were conducted, and a successful proposer was identified and announced at the SRWA Board's August 1, 2019 Board meeting. SRWA has been engaged in contract negotiations with the successful proposer since this August Board meeting and expects to sign a contract with this entity in December 2019.

Permits Required

The SRWA has engaged the majority of the permitting/regulatory agencies and have identified the required elements of the application to be completed as required for project implementation listed in the table in *Section 5: Required Permits and Approvals* of this application. This information has been passed on to the DB teams in the form of technical appendices to the design-build Contract (DB Contract). The DB Contract transfers responsibility for completing all of the permits listed in the table in *Section 5: Required Permits and Approvals* of this application, with the exception of the New Domestic Water Supply Permit (which requires operation of the facility, an SRWA responsibility), to the DB team. The exact schedule for completing each of these permits will be developed by the selected DB team following execution of the DB Contract. The dates in the table in *Section 5: Required Permits and Approvals* of this application are estimates of when each permit will be completed based on when the detailed designs will be executed and when construction activities for each element of the work is anticipated.

Engineering and Design Worked Performed.

Design of the Turlock Finished Water Transmission Main will commence soon after the DB Contract is signed in December 2019. Design is estimated to be complete August 2020. Construction will begin shortly after design has been completed.

Construction activities are expected to be complete in September 2022.

See section 1.3, page 8 for a list of milestones and planned start and completion dates.

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

The Water Sales Agreement executed between TID and SRWA identifies how surface water will be ordered by SRWA and, subsequently, released by TID from La Grange Dam for diversion by SRWA 26 miles downstream on the Tuolumne River. The Water Sales Agreement also identifies "offset water" that will be

¹ http://www.climateassessment.ca.gov/regions/docs/20180827-SanJoaquinValley_Preview.pdf

provided by Ceres and Turlock to TID during irrigation season. The Water Sales Agreement identifies type of water that constitutes offset water and the amount of offset water to be supplied to TID based on the amount of surface water utilized by SRWA and based on the water year type (i.e. dry year, etc.).

1.5.5 Evaluation Criterion E ---Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or activity, including:

How is the proposed project connected to a Reclamation project or activity? SRWA is not aware of any connection between the proposed project and a Reclamation project or activity.

Will the project help Reclamation meet trust responsibilities to any tribe(s)? SRWA is not aware of any tribes that would benefit from this project.

Does the applicant receive Reclamation project water? Neither the SRWA nor the City of Turlock receive Reclamation project water.

Is the project on Reclamation project lands or involving Reclamation facilities? No, the proposed project is not located on Reclamation lands or involve Reclamation facilities.

Is the project in the same basin as a Reclamation project or activity? The project is not located within a basin that is subject to a Reclamation project or activity.

Will the proposed work contribute water to a basin where a Reclamation project is located?
The project benefits from an in-basin water transfer from TID to the SRWA to meet municipal and industrial demand within the TID service area. No surface water associated with this transfer will leave the Turlock Subbasin.

1.5.6 Evaluation Criterion F ---Department of the Interior Priorities

1. Creating a conservation stewardship legacy second only to Teddy Roosevelt

Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;

An alternatives analysis was conducted to determine the best practices to manage water resources for the Stanislaus Regional Water Authority and to adapt to changes in the environment due to climate change and increasing periods of drought, which is contributing to a significant decline in groundwater levels in the Turlock Subbasin. This decline in groundwater is causing surface depressions, higher concentrations of contaminants and may result in increases in salinity if the groundwater levels continue to lower. The Turlock Subbasin has been identified as a high priority basin necessitating the need for better management and to study for recharge opportunities. The proposed project to provide a new water supply source from the Tuolumne River will promote groundwater recharge of the basin. The alternatives analysis determined that this project is the best alternative for long-term resiliency.

Identify and implement initiatives to expand access to DOI lands for hunting and fishing;

This project may lead to increased quantities of fish available for sport fishing due to improving instream flows and temperatures, creating a more favorable habitat for anadromous fish.

3. *Restoring trust with local communities*

a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;

b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.

The proposed project is the result of decades of study, coordination and collaboration that led to the development of an agreement between the cities of Ceres and Turlock to form a JPA and enter into a water sales agreement (Appendix C) with the Turlock Irrigation District for the purpose to better manage the available water supplies for the region. This project requires collaboration with state agencies to approve the water diversion (pending) and to secure funding to complete the project. Over the past three years, multiple public meetings have been held to educate the residents of the cities and stakeholders in the region of the benefits of the project and the issues faced by the region. Stakeholders included in the public outreach for this project are: the elected officials from the cities of Ceres and Turlock; the Stanislaus County Board of Supervisors; Turlock Irrigation District; Stanislaus County Farm Bureau; Agricultural Center County Farm Advisors; Agricultural Commissioner; Stanislaus County Groundwater Forum; Stanislaus County Agricultural Advisory Board; Stanislaus County Groundwater Issues Forum Technical Advisory Committee; Turlock Irrigation District Customers; Residents within the cities and county; Manufacturers and food processors within the proposed service area; the BNSF Railway Company; CA Department of Water Resources; Central Valley Flood Protection Board; State and federal funding agencies; State Water Resources Control Board; California State University at Stanislaus; local media; and other irrigation districts.

5. *Modernizing our infrastructure*

a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;

b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;

c. Prioritize DOI infrastructure needs to highlight:

— . Construction of infrastructure;

The project utilizes the private sector to design and construct an infrastructure project serving American needs. By using a design-build process to complete this large-scale infrastructure project, the SRWA is removing impediments and additional layers of bureaucratic process that slow implementation of infrastructure projects and will also likely result in a more cost-effective approach.

This project also supports the DOI priority to construct infrastructure to improve water supply resiliency.

Section 2: Project Budget

2.1 Funding Plan and Letters of Commitment

No other federal funds have been received as of the date of this proposal; however, SRWA was notified that it was selected for funding under this Drought Resiliency program earlier this year for portions of the Ceres Finished Water Transmission Main and Water Treatment Plant. A funding agreement for this grant is not yet in-place. In addition, state funds have been requested from the Drinking Water State Revolving Fund (low interest loan) and other grants funds may be sought if opportunities arise.

The Reclamation funds for this project will help reduce the financial burden on these working class, agricultural communities. The SRWA member agencies will provide the additional funds required to complete the project and may also pursue alternate funding opportunities such as low-interest loans from the WIFIA program or the California I-Bank, if needed.

The funds requested from Reclamation will allow the SRWA to complete Turlock Finished Water Transmission Main and create better resiliency against future drought conditions for the city of Turlock and other agencies in the region dependent upon groundwater resources. Non-Reclamation funds will be committed and secured prior to the execution of an agreement with Reclamation.

Table1: Total Project Cost Table

SOURCE	AMOUNT
1. Costs to be reimbursed with the requested Federal Funding	\$750,000
2. Costs to be paid by the applicant	0
3. Value of Third Party contributions	\$29,055,550
Non-Federal Subtotal	\$29,055,550
TOTAL PROJECT FUNDING	\$29,805,550

Table 2: Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non Federal Entities	
State Revolving Fund Drinking Water Low Interest Loan	\$29,055,550
Non-Federal Subtotal	\$29,055,550
Other Federal Entities	
1. None known at this time	\$0
Other Federal Subtotal	\$0
REQUESTED RECLAMATION FUNDING	\$750,000

2.2 Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity	TOTAL
	\$/Unit	Quantity		
Salaries and Wages				
General Manager	\$250/hr	1,000	hours	\$250,000
Secretary	\$40.81/hr	375	hours	\$15,304
Finance Director	\$65.00/hr	625	hours	\$40,625
Fringe Benefits				
Full-Time Employees - Secretary	\$25.93/hr	375	hours	\$9,723
Part-Time Employees – Finance Director	\$6.74/hr	625	hours	\$4,212
Travel				
N/A				\$0
Equipment				
N/A				\$0
Supplies and Materials				
N/A				\$0
Contractual/Construction				
Turlock Finished Water Transmission Main	\$26,700,000	LS	LS	\$26,700,000
West Yost Associates – PM/Engineering Support	\$2,714,301	LS	LS	\$2,714,301
BKS Legal Services	\$30,788	LS	LS	\$30,788
Environmental and Regulatory Compliance				
Horizon Environmental – Environmental Consultant	\$40,597	LS	LS	\$40,597
Reclamation costs to ensure compliance (to be withheld from Federal award amount)	TBD	LS	LS	TBD
Total Direct Costs				\$29,805,550
Indirect Costs				
N/A	percentage	\$base		\$0
TOTAL ESTIMATED PROJECT COSTS				\$29,805,550

2.3 Budget Narrative

Salaries and Wages

Robert L. Granberg, SRWA General Manager – consultant to the SRWA, \$250/hr (no fringe benefits paid)

Allison Martin, SRWA Secretary, City of Turlock Employee, \$40.81/hr excluding fringe benefits

Marie Lorenzi, SRWA Finance Director, City of Turlock Part-Time Employee, \$65.00/hr excluding fringe benefits

These staff members will be responsible for the project oversight of consultants and contractors for the implementation of the design and construction, in addition to grant administration and reporting.

There are no known salary increases planned; however, SRWA may provide cost of living adjustments (COLA) to salaries during the term of this agreement.

Fringe Benefits

Allison Martin, SRWA Secretary, City of Turlock Employee, \$25.93/hr for fringe benefits only

Marie Lorenzi, SRWA Finance Director, City of Turlock Part-Time Employee, \$6.74/hr for fringe benefits only

Travel

Staff serving the SRWA is local, so no travel required. Travel for consultant staff is included in their contracts with SRWA, as needed.

Equipment

The project is being procured using a design-build procurement method. The breakdown of equipment costs is not requested or provided by the design-build teams submitting proposals, therefore, equipment costs are embedded with the construction costs.

SRWA will not be purchasing equipment to complete the proposed work.

Materials and Supplies

The project is being procured using a design-build procurement method. The breakdown of costs for materials and supplies is not requested or provided by the design-build teams submitting proposals, therefore, material and supply costs are embedded with the construction costs.

SRWA will not be purchasing materials or supplies to complete the proposed work.

Contractual/Construction (See included budget projections on page 27)

West Yost Associates – PM/Engineering Support \$2,714,301

Consultant project management and engineering support services were secured through a competitive bidding process.

West Yost Associates is the current consultant team assisting SRWA with preliminary design and construction management of Phases I and II (outside this proposed scope of work). The cost estimate for this work is based on similar work provided for another project of similar magnitude.

The following is a summary breakdown of the West Yost Services and Costs:

Program Management:

- Project Partner Meetings and Coordination: \$7,232
- Public Outreach: \$69,266
- Program Management Activities: \$314, 496
- Phase Planning: \$6,256

Facilities Planning:

- Water Quality Testing: \$40,328
- Schedule Development: \$7,145
- Program Budgeting: \$68,420

Permitting and Environmental Documentation:

- EIR Technical Assistance: \$10,754
- Non-Environmental Permits/Utility Coordination: \$80,870

Construction Management:

- Contract Compliance: \$898,560
- Construction Oversight: \$898,560

Bartkiewicz Kronick & Shanahan (BKS) – legal counsel \$30,788

- BKS is current legal counsel.
- This estimate is for drafting and reviewing legal agreements and legal counsel.

A copy of the hourly rates for legal services by title and of the legal services is include as an attachment in the appendices. The agreement has been fully executed; however, the signature blocks have been redacted.

Water Treatment Plant and Turlock Transmission Main Construction

The project is being procured using a design-build procurement method. A breakdown of costs has not been requested or provided by the design-build teams submitting proposals, therefore, we have a single estimated cost for the construction. The estimated cost for this scope of work is \$26,700,000, which is the average of the design and construction costs for the Turlock Finished Water Transmission Main provided in the three proposals received. The contract has not yet been awarded, so the details of the bids are not available or public distribution. Upon request, SRWA can provide this information to Reclamation for the

purposes of review and not to be available to the public until an agreement with the selected DB contractor has been completed by SRWA.

Environmental and Regulatory Compliance Costs

- **The cost incurred by Reclamation to determine the level of environmental compliance required for the project and review of environmental compliance documents prepared by a consultant.**

Due to the size of the proposed project, we do not know how much to estimate for Reclamation to conduct its environmental compliance review. Upon selection of award, SRWA will work with Reclamation to determine the level of compliance required and the associated cost.

While it is commonly recommended approximately 1% of the total project cost be used to estimate Reclamation's review, for this large project that value would exceed the amount of the requested grant funds. Furthermore, SRWA completed a full EIR that includes NEPA in order to comply with the Drinking Water State Revolving Fund Program requirements. Therefore, we are confident the level of review by Reclamation will not be extensive.

- **The cost incurred to prepare any necessary environmental compliance documents or reports**

The EIR for the project was completed in July 2018 by Horizon Environmental. The cost of completing this report is not included in the budget for the proposed scope of work.

The estimated cost of \$40,597 included in the budget is environmental monitoring during construction. See the attached rate sheet, items numbered 13, 17.3 and 17.4. This rate sheet includes costs for all phases of the regional water supply project, of which this is the final phase. The estimated cost has been adjusted from these categories on the proposal rate sheet to reflect a smaller project scope.

- **The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures**

The costs for securing the required permits will be included in the selected design-build contractor budget and is not separately identified at this time.

Other Expenses: None

Indirect Costs: None

**SRWA Regional Surface Water Supply Project
 Consultant Budget Projections by Task for FYs 21 - 23**

Task Name	West Yost	BKS	Horizon
Program Management			
Discussions with Potential Project Partners	\$ 7,232	\$ -	\$ -
Public Outreach	\$ 69,266	\$ -	\$ -
Program Management Activities	\$ 314,496	\$ -	\$ -
Future Phase Planning	\$ 6,256	\$ -	\$ -
Specialty Legal Counsel	\$ -	\$ 30,788	\$ -
	\$ -	\$ -	\$ -
Facilities Planning			
Demand and Supply Analysis	\$ -	\$ -	\$ -
Water Quality	\$ 40,328	\$ -	\$ -
Infiltration Gallery Evaluation	\$ -	\$ -	\$ -
Technical Assistance with TID's Water Right Modifications	\$ -	\$ -	\$ -
Schedule Development	\$ 7,145	\$ -	\$ -
Program Budgeting	\$ 68,420	\$ -	\$ -
Permitting and Environmental Documentation			
EIR Technical Assistance	\$ 10,754	\$ -	\$ -
Non-Environmental Permits/Utility Coordination	\$ 80,870	\$ -	\$ -
ROW Acquisition			
ROW Acquisition - Delivery Facilities	\$ -	\$ -	\$ -
ROW Acquisition - Turlock Facilities	\$ -	\$ -	\$ -
ROW Acquisition - Ceres Facilities	\$ -	\$ -	\$ -
Infrastructure			
Engineering Services During Construction	\$ -	\$ -	\$ -
Environmental Monitoring & Permit Compliance	\$ -	\$ -	\$ -
Project Procurement	\$ -	\$ -	\$ -
Predesign & Technical Appendices	\$ -	\$ -	\$ -
Ceres Pipeline Predesign & Technical Appendices	\$ -	\$ -	\$ -
Turlock Pipeline Predesign & Technical Appendices	\$ -	\$ -	\$ -
Specialty Procurement Legal Counsel	\$ -	\$ -	\$ -
Financial Evaluation of Proposers	\$ -	\$ -	\$ -
Contract Compliance	\$ 898,560	\$ -	\$ -
Construction Oversight	\$ 898,560	\$ -	\$ -
Regional DB Environmental Monitoring	\$ -	\$ -	\$ 40,597
TOTAL	\$ 2,714,301	\$ 30,000	\$ 40,000

Section 3: Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and National Historic Preservation Act (NHPA) requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why.

- **Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

Air Quality

Proposed project construction activities for the pipelines and related facilities would generate particulate matter from excavating, grading, trenching, and other construction activities. As stated in the project description, best management practices (BMPs) will be implemented during project construction to ensure that the regional air quality plan will not be violated. BMPs for the proposed project include but are not limited to, watering all disturbed areas, including overburden piles, which are not being actively used for construction purposes; stabilizing dust on all on-site unpaved roads and off-site unpaved access roads using water or chemical stabilizers/suppressant; limiting traffic vehicle speeds on unpaved roads to 15 mph; and adding gravel aggregate to ingress/egress routes to minimize track-out. Additional control measures identified in Regulation VIII – Fugitive Emissions will be incorporated into construction activities to further reduce construction impacts. The San Joaquin Valley Air Pollution Control Board (SJVAPCD) assumes that compliance with Regulation VIII successfully reduces potential fugitive dust emissions to less-than-significant impact. Therefore, the proposed project would not conflict or obstruct implementation of the San Joaquin Valley Air Quality Management Plan as it pertains to fugitive dust.

Construction of the project would result in diesel exhaust emissions from onsite heavy equipment. Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a toxic air contaminant by the ARB in 1998. Project construction would generate diesel PM emissions from the use of off-road diesel equipment. The Office of Environmental Health Hazard Assessment (OEHHA) requires that health risk assessments be based on a 70-year exposure period. Project construction is expected to occur over a period of 18 to 24 months, which is less than five percent of the usual exposure period, and the size of the construction equipment fleet expected to be relatively small. Because equipment use would be temporary and modest in scale, diesel PM from construction activities would not be anticipated to result in the exposure of sensitive receptors to levels that exceed OEHHA standards.

Animal Habitat

The project area is located in a region historically dominated by agricultural land uses. In general, only species able to use orchards and agricultural fields for foraging and nesting are found in these areas. The major wildlife corridor through the area is associated with the Tuolumne River riparian habitats. The project would not interfere substantially with the movement of any native resident or migratory wildlife species or

with established native resident or migratory wildlife corridors, because the project avoids the riparian habitats along the Tuolumne River. Furthermore, the pipeline would be buried below ground and constructed in segments, such that there would be no permanent barriers to migration in the area where construction is occurring.

Water Quality

During construction, ground disturbance and use of heavy construction equipment would have the potential to adversely affect water quality. Installation of the treated water transmission main from the WTP to the City of Turlock could potentially result in discharge of materials to one of TID's irrigation canals, which could then be transported to the Tuolumne or San Joaquin River.

The types of impacts described above are a common concern for nearly all ground-disturbing construction projects. Because the proposed project would disturb greater than 1 acre of land, it would be subject to the NPDES General Construction Permit. This permit would require preparation of a SWPPP, which would include measures to minimize potential for release of contaminants and possible transport of contaminants off site. The SWPPP would include good housekeeping measures for vehicle storage and maintenance (e.g., place all equipment or vehicles that are to be fueled in a designated area fitted with appropriate BMPs), as well as a spill response element to ensure that equipment and materials for cleanup of spills are available on site. The SWPPP also would include BMPs to provide effective erosion and sediment discharge control (e.g., soil cover for exposed slopes, perimeter controls, stabilized construction entrances and exits).

Compliance with the NPDES General Construction Permit and implementation of the SWPPP would prevent adverse impacts on water quality from project construction activities. Therefore, construction-related impacts on water quality would be less than significant.

Biological Resources

If construction occurs between February 1 and August 31, SRWA or its contractor(s) shall require that a qualified biologist conduct surveys no more than 10 days before the start of construction for Swainson's Hawk and White-tailed Kite in accordance with the recommended timing and methodology developed by the Swainson's Hawk Technical Advisory Committee (2000 or most recent). Surveys will cover a minimum ½ mile radius around the construction area. If nesting Swainson's Hawk or White-Tailed Kite are detected, buffers shall be established around active nests that are enough to ensure that breeding is not likely to be disrupted or adversely affected by construction. Buffers around active nests will be ½ mile unless a qualified biologist determines, based on a site-specific evaluation, that a smaller buffer is enough to avoid impacts on nesting raptors. Factors to be considered when determining buffer size include the presence of natural buffers provided by vegetation or topography, nest height, locations of foraging territory, and baseline levels of noise and human activity. Buffers shall be maintained until a qualified biologist has determined that the young have fledged and are no longer reliant on the nest or parental care for survival.

SRWA or its contractor(s) shall require that a qualified biologist conduct a preconstruction survey in all accessible areas or suitable Burrowing Owl habitat within 500 feet of construction activity. Surveys shall be conducted within 14 days before the start of construction activity in accordance with protocols

established in the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or current version). If no Burrowing Owls or signs of Burrowing Owls are detected during the survey, no further mitigation shall be required. If a preconstruction survey detects occupied burrows, a buffer shall be established, within which no ground-disturbing or vegetation removal activity is permissible. In accordance with guidance provided by CDFW, buffers around occupied burrows shall be a minimum of 656 feet (200 meters) during the breeding season (February 1 through August 31), and 160 feet (100 meters) during the non-breeding season, unless a qualified biologist determines, based on a site-specific evaluation, that a smaller buffer is sufficient to avoid impacts on the Burrowing Owl burrow. This protected area will remain in effect until the end of the Burrowing Owl nesting season (February 1 through August 31) or until CDFW approves a passive relocation plan. Burrowing Owls will be relocated from burrows only during the non-breeding season. If occupied burrows are to be relocated, a passive relocation plan shall be developed by a qualified biologist and approved by CDFW prior to implementation. SRWA shall enhance or create burrows in appropriate habitat at a 1:1 ratio (burrows destroyed to burrows enhanced or created) one week prior to implementation of passive relocation techniques. If burrowing owl habitat enhancement or creation takes place, SRWA shall develop and implement a monitoring and management plan to assess the effectiveness of the mitigation. The plan shall be subject to the approval of CDFW.

SRWA or its contractor(s) shall require that, upon completion of construction, disturbed soils within areas of native vegetation shall be revegetated with site-appropriate native species to limit subsequent encroachment of non-native weeds. Any plants of native woody species of 4 inches dbh or greater that are damaged or removed as a result of construction activity shall be replaced at a 1:1 ratio, this ratio will increase to 3:1 for nesting trees and native trees of 24 inches dbh and greater. Replaced woody plant species shall be maintained and monitored to ensure a minimum of 65 percent survival or woody planting after 3 years.

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

The valley elderberry longhorn beetle (“VELB”) is a federally listed Threatened Species. The larval stage of the VELB develop inside the stems of elderberry shrubs and emerge as adult beetles. The USFWS prohibits any disturbance within 100 feet of the dripline of any elderberry shrub without first obtaining permission to do so from the USFWS and requires mitigation for disturbance within 20 feet of the drip line of any elderberry shrub, even if the shrub is not damaged or removed.

Elderberry shrubs are a common plant along this portion of the Tuolumne River and there are several plants located around the Infiltration Gallery facilities (not included as part of this grant application). However, there are no elderberry plants within or near the proposed pipeline alignment.

- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.**

There are no “waters of the U.S.” along any of the proposed pipelines. The pipelines would not cross any natural stream courses or rivers; however, the proposed pipeline would cross several canals and irrigation

ditches in the area including the TID Ceres Main Canal (Upper Lateral No.1), TID Upper Lateral No.2, TID Upper Lateral No. 2½, TID Upper Lateral No. 3, and several unnamed irrigation ditches. These water conveyance structures would not be considered “waters of the U.S.” because they do not fit any of the criteria described in federal regulation 33 CFR Part 328 defining “Waters of the U.S.” Furthermore, the proposed project will not impact any stream channels requiring a 1600 permit from CDFW.

- **When was the water delivery system constructed?**

The water delivery system has yet to be constructed. The construction of the water delivery system is the project being proposed as part of this application.

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

The Turlock Finished Water Pipeline (FWP) will be constructed under the T.I.D. Ceres Main Canal and T.I.D. Upper Lateral 2-1/2 using open cut construction methods. The both canals will be reconstructed in kind immediately following the completion of the pipeline crossing. In addition, the Turlock FWP will run parallel to an existing irrigation canal; however, it will not impede upon the canal. There will be two canals that the Turlock FWP will tunnel underneath, therefore, not interfering with the operation of the canal system.

- **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.**

Sections of the Turlock Irrigation District (TID) system that are crossed by the proposed project pipeline route have not yet been recorded, although nearby and adjacent sections have been recorded. The site record for the TID system is not detailed (Daly 2009a) but it states that, while the TID system appears eligible for the NRHP and CRHR as being the first publicly owned irrigation system in California, the various canals do not appear to be individually eligible due to loss of integrity over decades of modifications, such that they no longer resemble the original dirt conveyances. The Historic Property Data File for Stanislaus County, compiled by the Office of Historic Preservation, lists the Turlock Main Canal at Hatch Road with a rating of 6Y, not eligible for listing in the NRHP.

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

The Central California Information Center records search identified no recorded prehistoric archaeological sites within the ¼ mile radius of the project site. The NAHC search of the sacred lands database failed to indicate the presence of Native American resources in the immediate project area however, there have been no responses from tribal representatives indicating the presence of Native American cultural resources in the project area. Due to the long history of habitation of the area and the project’s proximity to the Tuolumne River, there is a possibility that human remains, including those interred outside of formal cemeteries, exist on the project site. If remains are present they could be disturbed during grading,

excavation, and other earth-moving activities during construction.

If remains, artifacts, or shell are uncovered during project construction activities, the project proponent shall retain a qualified archaeologist to perform an on-site inspection of the find. All earth-moving activities within 50 meters of the find shall cease until clearance is received by the archaeologist. If bone is uncovered that could be human, the Stanislaus County Coroner shall be notified immediately in accordance with State law. If the remains are determined by the county coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains.

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

No, the project does not have a disproportionately high or adverse effect on low income or minority populations. The completed project will bring high quality drinking water to customers in the region and will stimulate job growth by bringing work to the region.

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

No cultural resources that are eligible for inclusion in the CRHR or otherwise eligible as a significant historic resource under CEQA standards, and, thus, defined as an historical resource, have been identified within the project study area.

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

No. Any landscaping that is done will prevent weeds from growing, will include native species, and will be properly maintained.

Section 4: Letters of Support

The Turlock Irrigation District is a strong supporter and active partner in the effort to implement the Regional Surface Water Supply Project and has provided a letter of support (see Appendix A).

Section 5: Required Permits or Approvals

Permitting Agency	Type of Requirement	Required (Y/N/P ⁽¹⁾)	Applied (Y/N)	Acquired (Y/N)	Date Anticipated
State Agencies					
California State Water Resources Control Board	Statewide NPDES Permit for Drinking Water System Discharges to Waters of the United States	P	N	N	Jul-20
Central Valley Regional Water Quality Control Board	Waste Discharge Requirements - Limited Threat Discharges to Surface Water	P	N	N	Jul-20
Central Valley Regional Water Quality Control Board	Construction General Permit for Stormwater	Y	N	N	Jul-20
Cal/OSHA	Construction Safety Permits	Y	N	N	Jul-20
Local Agencies					
Turlock Irrigation District	Encroachment Permit	Y	N	N	Jul-20
Stanislaus County	Encroachment Permit	Y	N	N	Jul-20
Stanislaus County	Transportation Permit	Y	N	N	Jul-20
Stanislaus County	Rights of Entry Permits	Y	N	N	Jul-20
Stanislaus County	Monitoring Well/Boring Permit	Y	N	N	Jul-20
Stanislaus County	Well Construction/Destruction Permit	Y	N	N	Jul-20
Notes					
(1) "P" indicates that a permit may potentially be required. Whether or not the permit will be required is dependent upon specific design or construction methods selected by the Design-Build contractor and unknown at this time.					

Section 6: Official Resolution

The Stanislaus Regional Water Authority Board of Directors approved a resolution on March 28, 2019 authorizing the general manager to submit grant applications to and execute an agreement with Reclamation for the implement of the proposed project. The resolution agrees to use the funds identified in this funding plan for the proposed project.

Enclosed is a copy of the approved resolution.