Proposal to:

U.S. Department of Interior, Bureau of Reclamation

WaterSMART Grants:
Drought Response Program: Drought Resiliency Projects for Fiscal Year 2020

FOA No. BOR-DO-20-F002

UPPER VALLE DE LOS CABALLOS OPTIMIZATION PROJECT PHASE IV: ADDITIONAL RECOVERY/EXTRACTION WELL

Temecula, CA

October 15, 2019

Rancho California Water District

Applicant: Rancho California Water District

Project Manager:
Jacob Wiley
42135 Winchester Rd.
P.O. Box 9017
Temecula, CA 92589-9017
wileyj@ranchowater.com
(951) 296-6980 Office
(951) 296-6860 Fax

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Date
October 15, 2019

Applicant Information
Rancho California Water District
42135 Winchester Road
P.O. Box 9017
Temecula, Riverside County, CA 92589-9017

Project Summary
Completed in 2012, Rancho California Water District's (RCWD/District) *Upper Valle De Los Caballos Conjunctive Use Optimization Study*, describes a project implementation plan for optimizing RCWD's groundwater recharge and recovery facilities. The four-phased plan (Upper VDC Project) increases groundwater recharge and recovery through:

- Phase 1: Rehabilitating existing wells and improving disinfection processes,
- Phase 2: Pond grading improvements, installation of new recharge outlet structures, and recovery/extraction of additional recharge water through the construction of two new wells,
- Phase 3: Construction of a chlorine contact tank, a regional pump station, and centralized disinfection equipment, and
- Phase 4: Construction of new groundwater wells down-gradient from Phase 3 improvements

While the first two phases of the Upper VDC Project are fully complete, design and environmental compliance work for the third and fourth phases are underway. Phases 3 and 4 are being implemented concurrently, with the treatment facilities and pump station constructed as part of Phase 3 scheduled for completed approximately two months prior to construction of the first new Phase 4 recovery/extraction well. Completion of Phase 3 will allow for an increase of recharge at the Upper VDC facilities from 13 cubic feet per second (CFS) up to 42 CFS, a 223% increase. The first new recovery/extraction well constructed down-gradient from Phase 3 improvements is scheduled for completion in late 2021. RCWD is requesting a grant award of $750,000 for the construction of a second, additional recovery/extraction well (Proposed Project). The Proposed Project improves drought resiliency by providing RCWD with the ability to extract 1,200 acre feet per year of additional recharge water during all conditions, including dry years, and the operational flexibility to extract either local surface water conveyed to the recharge facilities from nearby Vail Lake or untreated import water, whichever is available. Infrastructure improvements completed as part of the Proposed Project contribute to the goals and objectives of the regional Drought Plan by improving the overall sustainability and reliability of groundwater supplies and improving regional water management. In addition, the Proposed Project contributes to the goals of the U.S. Bureau of Reclamation's WaterSMART Grants: Drought Response Program by building long-term resilience to drought and reducing the need for emergency response actions through creation of additional water supply and increasing water management flexibility.

Project Schedule *(length of time and estimated completion date)*
The Proposed Project can begin immediately upon award of funding and can be completed within the three-year requirement for Funding Group II projects. The Project Schedule indicates key program milestones and deliverables, and estimates an award date of 7/1/2020, a construction start

date of 8/15/2021, and a project completion date of 7/1/2023. The Project Schedule is provided on page 21 of this proposal.

Proximity of Project to Federal Facility

The Proposed Project is not on Reclamation project lands and does not involve Reclamation facilities. However, the project does reside in the Colorado River Basin within Reclamation's Lower Colorado Region, and a large portion of the water used in the Proposed Project area is imported through the Colorado River Aqueduct (CRA) (Reclamation project water).

E. Background Data

Water Supply Sources

The District obtains water from the following primary water sources:

- Imported State Water Project (SWP) water from the California Bay-Delta
- Imported Colorado River water from the Colorado River Aqueduct (CRA).
- Local groundwater from the Temecula Valley Groundwater Basin
- Recycled water from both District and Eastern Municipal Water District

Water Rights

Temecula Valley Groundwater Basin

The Temecula Valley Groundwater Basin has been governed under court jurisdiction since 1928, as part of the Santa Margarita River Watershed system. Since then, a series of court judgments have been issued directing the use and allocation of groundwater in the region. These judgments involved years of court cases and power struggles by multiple parties, including the Federal government (U.S. Marine Corps Camp Pendleton) over water use in the watershed basins, citing that the judgments did not fully meet the needs of the parties for effective water management. Finally, after many years, a settlement agreement, *"Cooperative Water Resource Management Agreement between Camp Pendleton and Rancho California Water District"*, was reached and executed in March 2002. This agreement remains in place today to govern water flow in the Santa Margarita River and use of the Murrieta-Temecula Basin. In addition, as a result of the judgments the State Water Resources Control Board issued Permit 7032 to RCWD in 2009, providing water appropriations in Vail Lake. The long-history of litigation of groundwater resources illustrates the scarcity of water in the region.

To further manage water in the region, a Watermaster was assigned by the court to oversee all uses within the Santa Margarita River Watershed, which includes three groundwater basins: the Santa Margarita Groundwater Basin, the Anza Groundwater Basin, and the Murrieta-Temecula Groundwater Basin. The Watermaster prepares the "Santa Margarita Watershed Annual Watermaster Report", providing annual reporting of water conditions in the watershed, but does not manage the groundwater basins. The Annual Watermaster Report includes information on surface and subsurface water, imports and exports, water rights, water production and use, threats to water supply, water quality, review of agreements, and Watermaster five-year projection of activities. The Court has retained jurisdiction over all surface flows of the Santa Margarita River Watershed and all underground waters determined by the Court to be subsurface flow of streams or creeks or which is determined by the Court to add to, support or contribute to the Santa Margarita River stream system. Local vagrant groundwaters that do not support the Santa Margarita River stream system are outside the Court jurisdiction.

Other Groundwater Resources
In December 2006, a 'Groundwater Management Agreement between Rancho California Water District and the Pechanga Band of Luiseno Mission Indians' was executed to govern the management of groundwater pumping from the Wolf Valley Groundwater Basin in a manner not to exceed the safe yield that protects groundwater in the basin for present and future uses.

Imported Water
The District receives imported water from the Metropolitan Water District of Southern California through two wholesalers, Eastern Municipal Water District (EMWD) and Western Municipal Water District (WMWD). EMWD is a public water agency formed in 1950 to deliver imported water to supplement local groundwater and evolved over time to include groundwater production, desalination, water filtration, wastewater collection and treatment, and regional water recycling to the list of products and services it offers to its approximate 100,000 customers. EMWD is a member agency of Metropolitan and receives imported water from the CRA and the SWP. EMWD provides wholesale water to the District as a sub-agency. WMWD is a public water agency formed in 1954 to bring supplemental water to growing Riverside County. WMWD is a member agency of Metropolitan and serves water to approximately 23,000 domestic and 130 irrigation connections in its retail service area to a population of about 85,000 in unincorporated areas of Riverside County. WMWD provides wholesale water to RCWD, which consists of water from the CRA and SWP.

Recycled Water
Recycled water in the RCWD service area is produced from two facilities: the Santa Rosa Water Reclamation Facility operated by RCWD, and the Temecula Valley Regional Water Reclamation Facility (TVRWRF) operated by EMWD. Both plants treat wastewater to Title 22 standards. In 2010, RCWD served approximately 4,400 AFY of recycled water. At present, RCWD is maximizing recycled water from these two plants to meet landscape irrigation demands. Additional recycled water from TVRWRF could be used if advanced treatment beyond Title 22 standards was applied. As a result, not all of the recycled water from TVRWRF is beneficially used and must be pumped out of the basin for reuse in other basins or discharged to Temescal Creek.

Current Water Uses
RCWD provides water for both urban and agricultural end-uses for the following types of water consumers: Single-Family Residential, Multi-family Residential, Commercial, Industrial, Institutional and Governmental, Dedicated Landscape, Agricultural, and Agricultural/Residential

Number of Water Users Served
According to the District's 2015 Urban Water Management Plan, RCWD served a population of 148,105 through approximately 44,000 water service connections. Estimated current population (for 2019), is over 150,000.

Current and Projected Water Demand
During Fiscal Year 2014/15, total water demand was 65,279 acre-feet. This demand is described in the District's Urban Water Management Plan as follows:

Use Type	Fiscal Year 2014/15		
	Description	Level of Treatment	Volume
Single Family Residential		Drinking Water	25,308
Multi-Family Residential		Drinking Water	2,201
Commercial	Includes Industrial	Drinking Water	3,393
Institutional/Governmental		Drinking Water	463
Dedicated Landscape Irrigation		Drinking Water	5,601
Agricultural Irrigation		Drinking Water	21,940
Sales/Transfers/Exchanges to Other Agencies	Water Wheeled to Other Agencies	Drinking Water	304
Sales/Transfers/Exchanges to Other Agencies	Santa Margarita River Discharge Water	Raw Water	2,954
Losses		Drinking Water	3,040
Other	Construction Meters	Drinking Water	75
TOTAL			**65,279**

Water demand is expected to increase each year. Projected future water demands are shown in the following table for every five years beginning in 2020 and until the year 2040.

Use Type	Description	Projected Water Use				
		2020	2025	2030	2035	2040
Single Family Residential		28,870	30,062	31,253	32,443	33,774
Multi-Family Residential		2,511	2,615	2,718	2,822	2,937
Commercial	Includes Industrial	3,871	4,031	4,190	4,350	4,529
Institutional/Governmental		528	550	571	593	618
Dedicated Landscape Irrigation		6,389	6,653	6,916	7,180	7,474
Agricultural Irrigation		25,217	26,258	27,298	28,338	29,501
Sales/Transfers/Exchanges to Other Agencies	Water Wheeled to Other Agencies	2,781	5,278	5,278	5,278	5,278
Sales/Transfers/Exchanges to Other Agencies	Santa Margarita River Discharge Water Transfer	4,000	4,000	4,000	4,000	4,000
Losses		3,391	3,531	3,671	3,811	3,967
Other	Construction Meters	85	89	93	96	100
Wetlands or Wildlife Habitat		2	0	0	0	0
TOTAL		**77,645**	**83,067**	**85,988**	**88,911**	**92,178**

Potential Shortfalls in Water Supply

The reliability of the District's water supply is largely dependent on the reliability of its imported water supplies, which are delivered by the Metropolitan Water District of Southern California. On April 14, 2015, Metropolitan announced a 15% reduction in deliveries due to a fifth consecutive year of drought in California and in response to new State of California Regulations. This was the fourth time Metropolitan has restricted imported supplies in response to drought

conditions, the last being a 10% cutback from July 2009 to April 2011. While the 15% cutback of 2015 has been temporarily lifted because of recent precipitation in the northern California, the long-term reliability of RCWD's imported supplies is questionable due to the state's extreme variability in precipitation, and due to ongoing drought within the Colorado River Watershed.

The District also depends on local water supplies from the Temecula Valley Groundwater Basin. While imported supplies brought from northern California seem to have recovered (at least temporarily), local supplies have not recovered from the recent five-year drought. In fact, local drought conditions have continued beyond the five-year statewide drought, and water levels both within the local groundwater basin and within the District's Vail Lake have dropped to historic lows. At this point, the District compensates for reduced local supplies through expensive imported water purchases and through increased conservation efforts. The Proposed Project leverages both local surface water and inexpensive untreated import water supplies as they become available to create additional local groundwater supply, which can be used during droughts and emergency situations.

Major Crops and Total Acres Served

Typical agricultural uses include major crops of avocados, citrus, and winegrapes, totaling approximately 9,127 irrigated-acres, or approximately 10 percent of the District's service area.

Description of Water Supply Facilities/Distribution System

RCWD receives its imported water (treated and untreated) directly through six Metropolitan water turnouts, three in EMWD's service area and three in WMWD's service area. The District pumps groundwater from 48 district wells and recycles water at its Santa Rosa Water Reclamation Facility (SRWRF). Additional recycled water is available from EMWD.

RCWD's domestic distribution system includes about 900 miles of water pipelines to convey water to customers. It is composed of two divisions: the Santa Rosa Division in the westerly half, and the Rancho Division in the easterly half. Each division provides water through a number of pressure zones ranging from 1,305 feet (above sea level) to 2,850 feet. The 1,305 zone provides service to the I-15 corridor area and serves as the "forebay zone" for several pump stations which supply higher zones. Treated water from Metropolitan and the majority of groundwater enters the RCWD system in this zone. Some additional groundwater enters the system in the 1380, 1610, and the 1790 Zones of the Rancho Division, in the 1500 Zone of the Santa Rosa Division. RCWD owns and operates 37 storage reservoirs and one surface reservoir, Vail Lake. Current reservoir tank storage is 54.7 million gallons (MG) in the Santa Rosa Division and 83.4 MG in the Rancho Division. The storage capacity of Vail Lake is 49,000 AF. RCWD has implemented a comprehensive reclaimed storage pond system including the ability to convey water back to the treatment facility for supplemental treatment or pumping direct to the distribution system. Current storage capacity is in excess of 737 AF. Ultimate capacity requirements are approximately 2,700 AF.

Past Working Relationships with Reclamation

Date	Description of Relationship	Project Description
2019	In the process of executing a $750,000 agreement though WaterSMART: Drought Resiliency Program	The Project involves the construction of the first new recovery/extraction well down-gradient from recently improved groundwater recharge facilities.
2019	In the process of executing a $75,000 agreement through the WaterSMART; Small Scale Efficiency Projects Program	The Project improves water loss management by upgrading sixteen existing propeller-driven meters at the District's water production facilities to state-of-the-art electromagnetic meters.
2019	In the process of executing a $1.7 million agreement through WaterSMART: Title XVI	The Proposed Activity will consist of retrofitting 58 irrigation sites to accept recycled water and of activities required prior to construction of a small scale groundwater recharge facility.
2018	Entered into $44,046.80 Lower Colorado Region Water Conservation Field Services Grant Program Agreement	Deploys ultrasonic water meters and an upgraded MyWaterTracker tool within strategically selected segments of the District's customer population.
2018	In the process of executing a $70,500 Agreement through WaterSMART: Small Scale Water Efficiency Projects	RCWD will establish a District Metered Area within a portion of the District's service area, which will function as a permanent water loss control system.
2017	Entered into $47,400 Lower Colorado Region Water Conservation Field Services Grant Program Agreement	Developed written water management plan for improving water pricing structure for agricultural and commercial customers
2016	Entered into $79,204.70 Lower Colorado Region Water Conservation Field Services Grant Program Agreement	Integrated three water conservation devices at five landscape irrigation sites for increasing irrigation efficiency
2016	Entered into $1,000,000 Agricultural Water Conservation and Efficiency Grants Fostering District/Farmer Partnerships Agreement	Provides financial incentives to farmers for replacing high water use crops with lower water use varieties.
2014	Entered into a $298,677 Bay-Delta Restoration Program: CALFED Water Use Efficiency Grant Agreement	Upgraded water meters to AMI Itron 100W Choice Connect network System, which automatically collects and stores hourly consumption data
2013	Entered into $54,681 Lower Colorado Region Water Conservation Field Services Grant Program Agreement	Developed blueprint for water use efficiency, to provide direction on programs to meet District's water efficiency goals

2012	Entered into $55,000 Lower Colorado Region Water Conservation Field Services Grant Program Agreement	Implemented cost-effective outdoor water use efficiency measures in residential landscapes
2012	Entered into $174,192 Bay Delta Restoration Program: Agricultural Water Conservation and Efficiency Grant Agreement	Promoted on-farm water use efficiency, building upon an existing Program to provide farmers with tools for scheduling irrigation events more accurately and effectively
2012	Entered into $150,000 WaterSMART: Title XVI Water Reclamation and Reuse Program Agreement	Completed Vail Lake Indirect Potable Reuse Conceptual Design Study
2009	Entered into $6,100,000 American Recovery and Reinvestment Act (ARRA) Agreement	Completed Vail Lake Stabilization and Conjunctive Use Project
2009	Entered into $260,440 CALFED Water Efficiency Grant Agreement	Targeted 500 high water use residential customers for on-site evaluations to identify and mitigate water waste
2008	Entered into $100,000 Soil and Moisture Conservation Program Grant Agreement	Funded a study demonstrating that smart irrigation controllers can provide water savings while maintaining crop integrity and fruit production for avocado growers
2007	Entered into $87,500 Water 2025: Preventing Crisis and Conflict in the West, Challenge Grant Agreement	Extended an ongoing smart irrigation controller direct install program for commercial and residential water users

F. Project Location

Rancho California Water District (RCWD/District) provides water for urban and agricultural uses to the City of Temecula, portions of the City of Murrieta, and unincorporated southwestern Riverside County lands in the surrounding area. RCWD comprises nearly 100,000 acres in the southwestern portion of Riverside County, California. The District is about 85 miles southeast of the City of Los Angeles, 40 miles south of City of Riverside and 65 miles north of the City of San Diego.

The District's service area is bounded on the southwest by the Santa Ana Mountains and on the northeast by Gavilan Hills. Figure 1 shows the location and boundary of RCWD in the State of California, within the County of Riverside, adjacent to the counties of San Diego and Orange, and the cities of Temecula and Murrieta identified within the District service area.

The Proposed Project is located within the District's Rancho Division (east side of I-15) about one mile downstream of Vail Lake as shown in Figure 1.

Figure 1

G. Technical Project Description and Milestones

Project Summary

The Proposed Project is part of the fourth and final phase of the larger Upper VDC Optimization Project (see Appendix B), which increases groundwater recharge and recovery at RCWD's existing facilities. The first two phases of the Project are complete, and the third and fourth phases are being implemented concurrently, with Phase 3 scheduled for completion approximately two months prior to Phase 4. RCWD is requesting a grant award of $750,000 for the continued implementation of Phase 4, which involves construction of an additional recovery/extraction well down-gradient from Phase 3 improvements to groundwater recharge and treatment facilities. The first well constructed as part of Phase 4 is scheduled for completion in late 2021, and the additional well (constructed as part of the Proposed Project) can be completed by mid-2023. The Proposed Project improves drought resiliency by providing RCWD with the ability to extract 1,200 acre feet per year of additional water during all water supply conditions, including dry years, and improves operational flexibility by giving the District the ability to extract either local water conveyed to the recharge facilities from nearby Vail Lake or untreated import water, whichever is available. The non-Federal cost share for the Proposed Project is secure and included in RCWD's budget for Capital Improvement Projects. Specific milestones required for implementation of the Proposed Project involve Preliminary Design, Contract Procurement, Environmental Compliance, Permitting, Final Design, and Construction. Following are detailed descriptions of these milestones.

- ***Milestone 1: Preliminary Design***
  Preliminary Design activities include the awarding of a contract by RCWD for preliminary design services and for preparation of a Preliminary Design Report including groundwater modeling and design drawings. The Preliminary Design Report is scheduled for completion at the end of October 2020.

- ***Milestone 2: Professional Services Procurement for Final Design of Well Drilling and Equipping***
  RCWD is preparing to advertise two separate proposal opportunities for final design: one for well drilling and one for well equipping. Once received, RCWD staff will review the proposals submitted, and award two separate contracts for the design work. Work for accomplishing this milestone is scheduled for completion in January 2021.

- ***Milestone 3: Environmental Compliance***
  Environmental compliance includes gaining both California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA) approval for the Proposed Project. The process of gaining these approvals will begin in April 2021, and will be complete by September 2021.

- ***Milestone 4: Final Design - Well Drilling***
  Final Design activities for well drilling will begin immediately upon completion of Milestone 2. Specific activities required for completion of this milestone include preparation of 90% Well Drilling Design Plans by a consultant, RCWD staff review of the Well Drilling Design Plans, and completion of 100% Well Drilling Design Plans by the consultant based on RCWD staff input. The well drilling component of Final Design will be completed by June 2021.

- ***Milestone 5: Contractor Procurement for Well Drilling Construction***
  When Milestone 4: Final Design – Well Drilling is complete, RCWD will advertise a construction bid opportunity for drilling the additional well. RCWD staff will review the bids submitted, award a contract for the drilling work, and issue a Notice to Proceed. Contractor Procurement for Well Drilling begins in June 2021, and will be complete by August 2021.

- ***Milestone 6: Permitting***
  Upon issuance of the contract for the drilling of the additional well, the District and the Contractor will jointly apply for a well drilling permit through the Riverside County Department of Environmental Health. This permit is typically issued within one to two weeks from time of submittal and its primary purpose is for the County to gather information about the proposed well and ensure there are no public health concerns associated with the proposed placement of the well. In addition, the District maintains a water supply permit from the Regional Water Quality Control Board (RWQCB), which requires a permit amendment prior to a new well going into service. A permit amendment requires that the District complete an application package that includes a well construction details, a Drinking Water Source Protection Plan, documentation of Environmental Compliance (California Environmental Quality Act), well and disinfection data sheets, and an operations plan. Once the application package is approved, RWQCB completes the permit amendment and issues to the District any conditions for operation of the facility including water quality monitoring requirements and water quality thresholds. Permitting will being concurrently with Milestone 5: Contractor Procurement for Well Drilling and will be completed by June 2023.

- ***Milestone 7: Construction: Well Drilling***
  Drilling of the well will begin after a well drilling contractor is procured, and appropriate permits are secured. Well drilling will take approximately 7 months and is scheduled for completion by March 2022.
- ***Milestone 8: Final Design: Well Equipping***
  Final Design activities for well equipping will begin during well drilling construction after pump test data become available. Specific activities required for completion of this milestone include: preparation of 90% Well Equipping Design Plans by a consultant, review pump test results from well drilling construction, and completion of 100% Well Equipping Design Plans. The well equipping component of Final Design will begin in September 2021, and will be complete by April 2022.
- ***Milestone 9: Contractor Procurement for Well Equipping Construction***
  When Final Design for well equipping is completed, RCWD will advertise a construction bid opportunity for the equipping of the well. RCWD staff will review the bids submitted, award a contract for the equipping work, and issue a Notice to Proceed. This milestone will begin in April 2022, and is scheduled for completion by June 2022.
- ***Milestone 10: Construction: Well Equipping***
  Equipping of the well will begin after a contractor is procured as part of Milestone 9. This work will begin in June 2022, will take approximately 12 months, and is scheduled for completion by May 2023.

H. Performance Measures

Among the many benefits the Proposed Project provides to the District, the primary benefit is the creation of additional water supply. RCWD proposes the use of two performance measures for quantifying this benefit:

1. ***Groundwater Produced by the Newly Constructed Well***
   The well that is constructed as part of the Proposed Project will be outfitted with a flow meter connected to the District's existing automated metering infrastructure, which will allow for remote monitoring and supervision of water production provided by the well. Data from the flow meter will be collected by District staff and stored in a database, and will be considered additional water supply.

2. ***Total Groundwater Produced***
   To confirm that groundwater produced at the well constitutes additional water supply, total groundwater produced at the recharge facilities after construction of the new well will be compared to groundwater production at the facilities during prior years when the well was not in operation. The difference in groundwater production at the recharge facilities before and after construction of the well will be compared the amount of groundwater produced by the new well to confirm actual additional water supply created by the Proposed Project. The District will report on these performance measures to Reclamation as data becomes available.

I. Evaluation Criteria

1. Project Benefits

The Proposed Project is a component of the larger Upper VDC Project (see Appendix B), which helps build long-term resilience to drought through enhancements to RCWD's water infrastructure, makes additional water supplies available to the District's customers, and improves operational flexibility and cost-effectiveness in managing water supplies. In addition, the Proposed Project provides benefits to the environment (water quality benefits). Following are detailed descriptions of Proposed Project's benefits.

Long-Term Drought Resilience

RCWD's dependence on expensive treated import water supplies threatens the District's resilience to drought. Depending on local groundwater conditions, up to 75% of the District's total annual water supply may consist of treated water imported through the Metropolitan Water District of Southern California. The Proposed Project is part of the larger Upper VDC Project, which is intended to reduce dependence on treated import and increase water supply reliability water by utilizing the underlying groundwater basin to create additional local water supply, which can be drawn upon under any water supply condition, including during dry years. These additional supplies are less costly that treated import water, and are created by increasing RCWD's ability to recharge locally available surface water from nearby Vail Lake and/or relatively inexpensive untreated import water, whichever is available, at the District's Valle de Los Caballos Upper Recharge/Recovery Facility (Upper VDC Recharge Facility). Recharge and recovery efforts implemented as part of the Proposed Project will continue to provide these benefits for an estimated 30 years, and the District expects that the Proposed Project's additional well, with proper maintenance, will provide benefits for at least 50 years.

Additional Water Supplies

The estimated quantity of additional water supply made available by the Proposed Project is 1,200 acre feet per year (AFY). The 1,200 AFY production is based on an estimated instantaneous production rate from the well of 1,000 gallons per minute and a utilization factor of 75% or 18 hours per day run time. Based on prior experience with constructing wells in the vicinity of the Proposed Project are the District is confident that the well will produce the anticipated 1,200 AFY. To confirm anticipated yields, the District's Hydrogeologist will be constructing a focused groundwater model as part of Preliminary Design efforts. The focused model will be based on the District's existing basin wide groundwater model, on 25 years of production history, and on relevant data collected in the area.

The 1,200 AFY of additional water supply created by the Proposed Project represents 2.2% of the District's total annual water supply and 3.8% of the annual local groundwater supply. These percentages are calculated based on average annual District water production over the past three calendar years; during calendar years 2016 through 2018 RCWD delivered an average of 54,786 acre feet per year to approximately 44,000 customers in the City of Temecula, portions of the City of Murrieta, and some areas of unincorporated Riverside County. Therefore, the additional water supply provided by the new recovery/extraction well represents 2.2% of the District's total supply (1,200 / 54,786 = 2.2%). During that same three-year period, only a portion of the total supply delivered by RCWD represented groundwater supply. Of the 54,786 acre feet delivered, 31,907 acre feet came from groundwater supplies. Therefore, as a percentage of

groundwater supplies, additional water made available by the Proposed project represents 3.8% (1,200 / 31,907 = 3.8%).

Additional supplies made available by the Proposed Project are significant in terms of further diversifying the District's water supply portfolio to increase water supply reliability and drought resilience for 150,000 water users, and reducing water supply costs by avoiding purchases of expensive treated import water

Improved Water Management

Optimization of the Upper VDC Recharge Facilities drastically improves water management by providing the District with the operational flexibility to extract either local water conveyed to the recharge facilities from nearby Vail Lake or untreated import water, whichever is available. The project allows RCWD to extract these additional supplies during both normal operations and during times of drought. The estimated quantity of water better managed through the implementation of the Proposed Project is 1,200 acre feet per year, which is equal to the amount of water recovered on an annual basis by the additional well, and represents 2.2% of the District's total water supply and 3.8% of the District's groundwater supply.

Furthermore, the Proposed Project improves water management through more cost-effective water management practices. By recharging and recovering inexpensive and locally available surface water supplies and/or relatively inexpensive untreated import water, the District realizes considerable cost savings over the alternative of importing treated supplies. For example, extracted recharge water sourced from Vail Lake costs $950 per acre foot less than treated import supplies; therefore, use of this local supply reduces District water supply costs and mitigates rate increases for its customers. Based on the 1,200 AFY produced by Proposed Project's additional well, these savings are equal to $1,140,000 annually. Moreover, untreated import water costs $319 per acre foot less than treated import supplies. Based on the 1,200 AFY, use of this water supply leads to savings of $382,800 annually.

Environmental Benefits

The Proposed Project does not benefit any endangered species; however, it does benefit the environment in terms of enhancing groundwater quality. The project involves the extraction of recharge water that is, oftentimes, higher in significantly quality than native groundwater.

Applicable Additional Information - Wells

The District in now in the process of designing and constructing new treatment equipment and pump station facilities for the Upper VDC Project, which will increase the District's recharge capabilities from 13 cubic feet per second by more than two times to 42 cubic feet per second. The Proposed Project involves the construction of, an approximately 1,000 foot deep vertical groundwater well. The well will be constructed of type 316L stainless steel casing and screen to reduce corrosion and extend the useful life of the facility. The estimated capacity of the additional well is 1,200 acre feet per year. The 1,200 AFY production is based on an estimated instantaneous production rate from the well of 1,000 gallons per minute and a utilization factor of 75% or 18 hours per day run time. The District plans to use the well as a primary source of supply to extract 1,200 acre feet per year of water recharged at the Upper VDC Recharge Facility. When local surface water supplies are not available for recharge and recovery, untreated import water will be recharged and then recovered by the well.

The District operates the Upper VDC Recharge Facility within the Temecula Valley Groundwater Basin and within the boundaries of two major aquifers, the Temecula and the Pauba, to provide a sustainable groundwater supply. The facility is located along the upper reach of the Temecula Creek, approximately 2.5 miles downstream of Vail Lake. Its recharge ponds consist of five basins with a recharge area of approximately 115 acres. The ponds are surrounded by earthen berms approximately 3 feet to 15 feet in height. Six active production wells (W152, W153, W154, W157, W158, and W161) are located on the berms surrounding the ponds and are near-continuously pumped to recover recharged water.

Neither of the two aquifers nor the Temecula Valley Groundwater Basin is overdrafted, and the installation of the additional well will not lead to land subsidence or overdraft conditions since the District will continue to operate the groundwater basin with safe yield limits. To prevent groundwater overdraft and all of its associated impacts, the District conducts an annual review of available groundwater supplies in collaboration with the District's Hydrogeologist Geoscience Support Services, Inc. (See Appendix C). The purpose of the review is to recommend a ground water production program for each fiscal year. Groundwater production recommendations are based primarily on a review of individual well production and historical hydrographs. During the review, groundwater level elevations from all production and monitoring wells are considered Hydrologic subareas and "index wells" representing water level changes in subareas are used to help formulate recommendations for groundwater production. The review also includes analysis of reviews from previous years, instantaneous yield, natural and artificial recharge, water quality, pump settings, and well construction factors. Where water level trends in subarea index wells indicate a decline over several years, lower production values are recommended. Where water level declines have not occurred, and as other factors permitted, recommended production values are sometimes increased. The recommended amount of annual production for the wells are made with consideration given to historical water levels, precipitation, production, and expected natural and artificial recharge. Consideration is also given to the projected production from Western Municipal Water District's production wells in the northern Murrieta Valley area. For illustrative purposes, the 2016-2017 recommended Upper VDC purchased untreated water recharge was 12,700 acre feet.

By increasing RCWD's available groundwater supplies, the Proposed Project increases the overall sustainability of RCWD's local supplies, decreases the District's dependence on drought-stricken and expensive imported supplies, and reduces the threat of water shortage impacts. The following map shows the approximate location of the additional well within the Upper VDC Recharge area.

2. Drought Planning and Preparedness

Completion of the Proposed Project represents an important contribution to the accomplishment of the goals and objectives described in the Upper Santa Margarita Watershed's (USMW) Integrated Regional Water Management Plan (IRWM Plan). RCWD leads the Regional Water Management Group, which developed the IRWM Plan in order to identify strategies for enhancing regional drought resiliency through more efficient use of water, protecting and improving water quality, and promoting environmental stewardship (See Appendix A). Development of the IRWM Plan was a collaborative process with significant input provided by multiple stakeholders including Federal agencies, state agencies, state conservancies and commissions, local agencies, Indian tribes, and non-profit organizations. Taking into consideration climate change impacts to water resources, the IRWM Plan outlines specific goals and objectives for achieving drought resiliency.

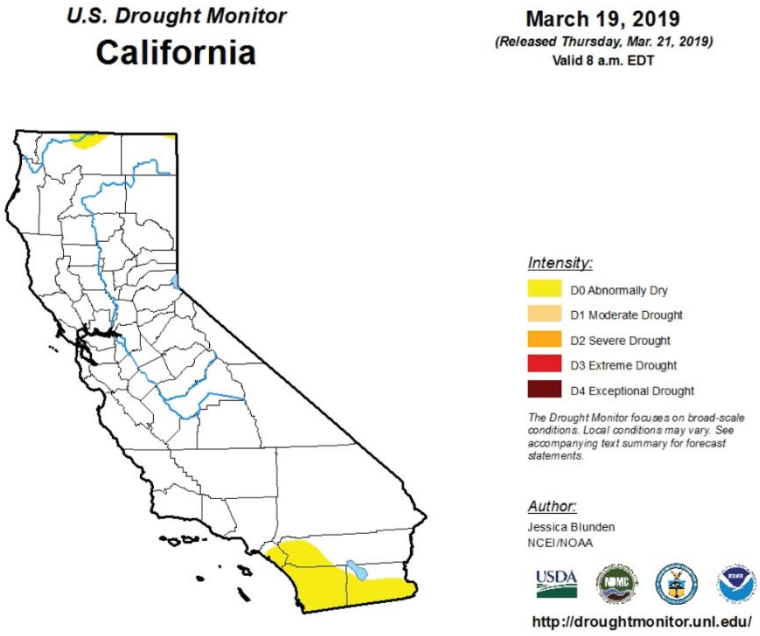
The two goals described in Chapter 3 of the IRWM Plan that are supported by the Proposed Project are: 1) increasing the diversification of the water supply portfolio, and 2) maximizing groundwater potential. Elaborating on these goals, the IRWM defines objectives necessary for achieving them, including: 1) increasing local supply development through implementation of projects that construct additional local water supply infrastructure for water conveyance, treatment, storage and distribution of these sources, and 2) improving the quality and ability to access and increase groundwater supply by improving water quality, optimizing existing supplies, and expanding infrastructure and maximizing storage through recharge and recovery. The Proposed Project contributes to the accomplishment of these

goals and objectives by constructing facilities that increase the recovery of groundwater recharge.

RCWD is adding the Proposed Project to the IRWM Plan's Project List. The process of adding projects to the list and prioritizing projects is described in Chapter 5 of the IRWM Plan. Because the Proposed Project aligns well with the goals of the IRWM Plan, RCWD anticipates the addition of the Proposed Project and its prioritization by May 2019, prior to grant award.

3. Severity of Actual or Potential Drought Impacts to be Addressed by the Project

All of California, including the District's service area, is at high risk of experiencing drought conditions in any given year. The state recently endured its worst drought in recorded history, and given the results of climate change modeling efforts, it is expected that severe drought events will reoccur into the future. During the most recent drought, which occurred from 2014 through 2018, the U.S. Drought Monitor classified the majority of California, including RCWD's service area, as being in an "Exceptional Drought" or "Extreme Drought." While these drought conditions have subsided temporarily due to recent precipitation in the northern portion of the state, there are still some areas that are classified as "Abnormally Dry." The District's service located in one of the areas of southern California considered "Abnormally Dry," and these conditions have had severe negative impacts on the availability of locally sourced groundwater.



The region's IRWM Plan (Appendix A) summarizes the impacts and effects of climate change for the Upper Santa Margarita Watershed (including the District's service area) through the year 2050. Generally, climate change is anticipated to cause increased temperatures and reduced rainfall; projections vary with some showing two to four inches less rainfall. And it's generally accepted that storms will be less frequent, but more intense, which will negatively impact recharge of groundwater supplies. With higher temperatures and changes in rainfall volume and frequency both in locally and across the state, additional impacts will be felt in the District's service area. In addition to negatively impacting local groundwater supplies, imported water supply from the State Water Project (Bay-Delta) is projected to decrease by up to 25 percent. Colorado River supplies to the lower basin states (Arizona, California, and Nevada) may decrease by up to 24 percent, or 1.8 thousand AFY out of the 7.8 million AFY allocated to the lower basin states. In addition, the District projects a 6% and 12% decrease in available local groundwater supplies in the third and fourth years of a multiple dry year scenario, respectively. In addition to negatively impacting water supplies available to the

District, increases in temperature and a drier climate are expected to increase water demand, particularly for irrigation (unless plant palettes are changed [e.g., removal of turf], or agricultural crops change), due to increases in evapotranspiration rates. Based on the types of crops grown on the 9,127 farmed acres within the District's service area, a 10% increase in evapotranspiration rates would lead to an estimated agricultural water demand increase equal to approximately 3,500 acre feet per year (between 5% and 7% of the District's total water supply). This increased water demand increases production costs for farmers, threatens the viability of agribusiness in the District service area, and negatively impacts the monetary value of farmland. In addition to rising evapotranspiration rates, rising population within the District's service area is increasing urban water demands. Population within the District's service area has increased by approximately 15% since 2013, and under severe drought conditions, the availability of water for human health and safety is threatened. Temperature increases are also expected to increase the frequency of wildfires, with studies suggesting a slightly increased risk of wildfire in the local region. Increases in wildfires have the potential to increase sedimentation and turbidity of surface waters and increase flash flooding.

The District's local groundwater supplies are limited, and it relies on imported supplies from California's State Water Project and the Colorado River Aqueduct to satisfy a large portion of the service area's ever-growing demands. Under conditions of severe drought, where both sources both local and imported water supplies are compromised, the District will not have another water source available to satisfy demands. In response to current drought conditions, the District has responded with implementation of a Water Shortage Contingency Plan, a call for extreme water use efficiency and conservation, a decrease in water budgets for classifications of users, and fines for those in violation of water shortage stage requirements. The Proposed Project adds an additional source of water supply to further diversify RCWD's water supply portfolio and adds flexibility in sourcing water supplies, giving the District options for satisfying ever-increasing demands under diminishing water supply conditions.

4. Project Implementation

Implementation of the Proposed Project does not require any new policies for administrative actions. RCWD is capable of proceeding with its implementation immediately upon entering into a Financial Assistance Agreement with Reclamation. The following information describes required engineering work, permitting, and environmental and regulatory compliance. In addition, a table is provided, which contains a Project Schedule, showing the stages and duration of the required work, including major tasks, milestones, and dates,

Design and Engineering

Preliminary Design will begin upon announcement of award. To complete the preliminary design work, a design consultant hired by RCWD will develop a focused groundwater model of the Upper VDC and prepare a Preliminary Design Report. The groundwater modeling work will allow for the evaluation of different well types, and includes:

- Vertically discretizing layers of young alluvium to better understand water flow between aquifer and allow for a performance evaluation of different types of wells,
- Construction of a focused groundwater model by decreasing the model cell size from 400 foot x 400 foot to 10 foot by 10 foot to better represent conditions in the Upper VDC recharge area, and
- Calibrating the focused model

The Preliminary Design Report will be created based on results of the modeling efforts, and will include: conceptual designs for typical vertical wells, well siting considerations, flow scenario alternatives, pipeline sizing details, preliminary engineering cost estimates, results of the modeling scenarios, and a recommendation for one of the scenarios for further development. Upon the completion of Preliminary Design, Final Design for well drilling and well equipping can begin. The scope of work for final design includes:

Final Design - Well Drilling

- Preparation of Technical Plans, Drawings and Specifications;
- Permitting and Bidding Assistance;
- Construction Management & Inspection;
- Comprehensive Well Destruction / Completion Report; and
- Preparation of Drinking Water Source Assessment Documents

Final Design - Well Equipping

- Preliminary well site layout alternatives;
- Utility verification (potholing), and traffic control details
- Well site and well site access road grading plans and storm drainage improvements;
- Engineering design of well discharge piping and connection to the existing system;
- Engineering design of the well pump-to-waste piping and discharge location
- Engineering design of the proposed well equipment and electrical service;
- Traffic control details for construction;
- Preparation of contract documents (bid documents, drawings, and specifications);
- Acquisition of all required construction encroachment permits;
- Preparation of engineer's estimates and construction schedules; and
- Bidding period support

Permitting

When Preliminary Design and Final Design are complete, a contractor will be procured for well drilling. Upon issuance of the contract for the drilling of the well, the District and the contractor will jointly apply for a well drilling permit through the Riverside County Department of Environmental Health. This permit is typically issued within one to two weeks from time of submittal and its primary purpose is for the County to gather information about the proposed well for their database and ensure there are no public health concerns associated with the proposed placement of the well. In addition, the District maintains a water supply permit from the Regional Water Quality Control Board (RWQCB), which requires the District request a permit amendment prior to a new well going into service. A permit amendment requires that the District complete an application package that includes well construction details, a Drinking Water Source Protection Plan, documentation of Environmental Compliance (California Environmental Quality Act), well and disinfection data sheets, and an operations plan. Once the application package is approved, RWQCB completes the permit amendment and issues to the District any conditions for operation of the facility including water quality monitoring requirements and water quality thresholds.

Environmental and Regulatory Compliance

The Proposed Project implementation plan also takes into account environmental and regulatory compliance with the California Environmental Quality Act, and applicable Federal environmental laws. RCWD staff has contacted the local Reclamation office and discussed

both the cost and timing for completing this requirement. Therefore, also included in the budget is an estimated line item cost of $10,000 for the potential Federal environmental compliance effort. This amount is based on recent input provided by compliance staff at RCWD's local Reclamation office.

Project Schedule

Project Tasks	Est. Project Schedule		Milestones and Deliverables
	Start	End	
Task 1: Grant Agreement Negotiation and Execution Includes negotiation and execution of a grant agreement between RCWD and Reclamation.	7/1/2020	10/1/2020	Milestones: • Award of Grant by Reclamation Deliverables: • Executed Grant Agreement
Task 2: Preliminary Design Includes awarding a contract for preliminary design and preparation of a Preliminary Design Report. At this point, the contract has been awarded, and Preliminary Design is underway. The Preliminary Design Report is scheduled for completion in June 2019.	7/1/2020	10/31/2020	Milestones: • RCWD approves Award of Contract to lowest qualified bidder Deliverables: • Preliminary Design Report
Task 3: Professional Services Procurement-Final Design Includes advertisement of two separate requests for proposals for professional design services for drilling and equipping of the well, review of proposals received by RCWD staff, award of two contracts for the final design, and issuance of Notices to Proceed.	11/1/2020	1/15/2021	Milestones: • RCWD approves Award of Professional Services Agreements Deliverables: • Proof of Advertisement
Task 4: Environmental Compliance Includes gaining California Environmental Quality Act (CEQA) and applicable Federal approval.	4/1/2021	9/1/2021	Milestones: • Satisfy compliance requirements Deliverables: • Documentation illustrating compliance approval
Task 5: Final Design – Well Drilling Includes preparation of 90% Well Drilling Design Plans, RCWD staff review, and completion of 100% Well Drilling Design Plans.	2/1/2021	6/1/2021	Milestones: • Complete Final Design Deliverables: • 90% plans • 100% plans

Project Tasks	Est. Project Schedule		Milestones and Deliverables
	Start	End	
Task 6: Contractor Procurement – Well Drilling Includes advertisement of construction bid opportunity for drilling the well, review of bids by RCWD staff, award of contract for drilling work, and issuance of Notice to Proceed.	6/1/2021	8/15/2021	Milestones: • RCWD approves Award of Contract to lowest qualified bidder Deliverables: • Bid Documents • Proof of Advertisement • Contractor Notice of Award • Contractor Notice to Proceed
Task 7: Permitting Includes obtaining permits through the Riverside County and Regional Water Quality Control Board.	6/1/2021	6/30/2023	Milestones: • Obtain permits Deliverables: • Permit documentation
Task 8: Construction – Well Drilling Includes drilling of the well by drilling contractor and inspection activities conducted by RCWD staff.	8/15/2021	3/1/2022	Milestones: • Drill Well Deliverables: • RCWD Inspection Reports
Task 9: Final Design – Well Equipping Includes preparation of 90% Well Equipping Design Plans, review of pump test results from well drilling construction, and completion of 100% Well Equipping Design Plans.	9/1/2021	4/1/2022	Milestones: • Complete Final Design Deliverables: • 90% plans • Pump test results • 100% plans
Task 10: Contractor Procurement – Well Equipping Includes advertisement of construction bid opportunity for equipping of the well, review of bids submitted by RCWD staff, award of contract for the equipping work, and issuance of Notice to Proceed.	4/1/2022	6/15/2022	Milestones: • RCWD approves Award of Contract to lowest qualified bidder Deliverables: • Bid Documents • Proof of Advertisement • Contractor Notice of Award • Contractor Notice to Proceed
Task 11: Construction – Well Equipping Includes equipping of the well and inspection activities by RCWD staff.	6/15/2022	5/1/2023	Milestones: • Equip Well Deliverables: • RCWD Inspection Reports
Task 12: Project Administration Includes monitoring of performance measures, reporting, and invoicing by RCWD staff.	7/1/2020	7/1/2023	Milestones/Deliverables: • Submit Federal Financial Reports • Submit Performance Monitoring Reports • Submit Progress Reports • Submit Final Report

Project Tasks	Est. Project Schedule		Milestones and Deliverables
	Start	End	
			• Submit invoices and periodic financial reimbursement requests

5. Nexus to Reclamation

The Proposed Project will be implemented in Reclamation's Lower Colorado Region and will contribute to the drought resiliency within the Colorado River Basin through development of local groundwater supplies. Furthermore, imported water is delivered to the District by the Metropolitan Water District of Southern California through the State Water Project and is blended with Colorado River water (Reclamation project water). Historically, imported water has satisfied the majority of RCWD's demand (between 60 and 70 percent).

The Proposed Project also benefits Indian tribes. In December 2006, a 'Groundwater Management Agreement between Rancho California Water District and the Pechanga Band of Luiseno Mission Indians' was executed to govern the management of groundwater pumping from the Wolf Valley Groundwater Basin in a manner not to exceed the safe yield that protects groundwater resources in the Wolf Valley Groundwater Basin for present and future uses. The Proposed Project develops groundwater supplies within the adjacent Temecula Valley Groundwater Basin, and therefore, protects supplies within the Wolf Valley Basin, assisting in maintaining safe yield requirements for the benefit of the Pechanga Band of Luiseno Mission Indians.

6. Department of the Interior Priorities

The Proposed Project shares the following Department of the Interior priorities:

- *Creating a conservation stewardship legacy second only to Teddy Roosevelt*
  The Proposed Project uses best practices to manage water resources and adapt to changes in the environment.
- *Restoring Trust with Local Communities*
  The Proposed Project supports the local community's Integrated Regional Water Management Plan, which was developed in cooperation with community organizations regarding shared priorities related to water conservation and efficiency.
- *Striking a Regulatory Balance*
  By increasing water supply reliability, the Proposed Project helps to reduce the potential for implementation of drought declarations and related regulatory requirements imposed upon industry and private citizens.
- *Modernizing our infrastructure*
  The Proposed Project improves water infrastructure within Reclamation's Lower Colorado Region.

PROJECT BUDGET

A. Funding Plan and Letter of Commitment

Non-Reclamation Share of Project Costs

The Proposed Project's estimated non-Federal contribution is $2,966,485.31, which will be funded through RCWD's annual budget for Capital Improvement Projects (CIP). It is anticipated that none of the $2,966,485.31 non-Federal contribution will be incurred prior to award.

Letters of Commitment

The District is committed to providing at least $2,966,485.31 in cash for implementation of the Proposed Project, which represents the entire non-Federal contribution to the Project. Because there are no third-party contributors to the Proposed Project cost, there are no Letters of Commitment included with this proposal. This non-Federal contribution is secure and is included in the District's CIP budget. An Official Resolution from the District's Board of Directors will be provided to ensure commitment of these matching funds.

B. Budget Proposal

The total estimated cost for the Proposed Project is $3,716,485.31. RCWD is requesting a $750,000 grant to cover approximately 20% of the project cost. Grant funding will be used to pay for construction of the Proposed Project's additional well. Following is the Total Project Cost Table, which breaks down the total project cost according to cost sharing entities.

Table 1. Total Project Cost Table	
SOURCE	**AMOUNT**
Costs to be reimbursed with the requested Federal funding	$750,000
Costs to be paid by the applicant	$2,966,485.31
Value of third-party contributions	$0
Total Project Cost	**$3,716,485.31**

Furthermore, the following table provides detail regarding sources of Non-Federal and Federal funding.

Table 2. Summary of Non-Federal and Federal Funding Sources	
Funding Sources	**Funding Amount**
Non-Federal Entities	
1. Rancho California Water District	$2,966,485.31
Non-Federal Subtotal	**$2,966,485.31**
Other Federal Entities	
1. None	$ 0.00
Other Federal Subtotal	$ 0.00
Requested Reclamation Funding	**$750,000.00**
Total Program Funding	**$3,716,485.31**

The following Budget Proposal includes detailed information on Proposed Project cost categories and per-unit costs, and identifies the source of funding for each category (Federal or non-Federal).

Budget Item Description	Computation		Quantity Type	Reclamation Funding	Recipient Funding	Total Cost
	$/Unit	Quantity				
Salaries and Wages						
Engineering Manager	$ 87.56	200	$/HR	$ -	$ 17,512.00	$ 17,512.00
Principal Engineers	$ 66.52	400	$/HR	$ -	$ 26,608.00	$ 26,608.00
Contracts Manager	$ 73.55	100	$/HR	$ -	$ 7,355.00	$ 7,355.00
Inspections	$ 40.68	1100	$/HR	$ -	$ 44,748.00	$ 44,748.00
Water System Supervisor	$ 53.08	60	$/HR	$ -	$ 3,184.80	$ 3,184.80
Water Operations	$ 41.40	120	$/HR	$ -	$ 4,968.00	$ 4,968.00
Water Quality Supervisor	$ 51.95	40	$/HR	$ -	$ 2,078.00	$ 2,078.00
Water Quality Tech I/II	$ 42.71	80	$/HR	$ -	$ 3,416.80	$ 3,416.80
Electrical Services Supervisor	$ 52.83	80	$/HR	$ -	$ 4,226.40	$ 4,226.40
Salaries and Wages Subtotal		***2180***		***$ -***	***$ 114,097.00***	***$ 114,097.00***
Fringe Benefits	***Basis***	***% of Basis***				
As per Federally approved	$ 114,097.00	93.13%		$ -	$ 106,258.54	$ 106,258.54
Fringe Benefits Subtotal	***$ 114,097.00***			***$ -***	***$ 106,258.54***	***$ 106,258.54***
Travel - Not Applicable (N/A)						
Travel Subtotal	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Equipment - Not Applicable (N/A)						
Equipment Subtotal	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Supplies/Materials Subtotal						
Bid Document Reproduction	$ 2,500.00	1	lump sum	$ -	$ 2,500.00	$ 2,500.00
Supplies/Materials Subtotal	***$ 2,500.00***			***$ -***	***$ 2,500.00***	***$ 2,500.00***
Contractual						
Preliminary Design	$ 50,000.00	1	per contract	$ -	$ 50,000.00	$ 50,000.00
Final Design	$ 500,000.00	1	2 contracts	$ -	$ 500,000.00	$ 500,000.00
Well Drilling Construction	$ 1,347,000.00	1	per contract	$ 370,000.00	$ 977,000.00	$ 1,347,000.00
Well Equipping Construction	$ 1,260,600.00	1	per contract	$ 370,000.00	$ 890,600.00	$ 1,260,600.00
Contractual Subtotal	***$ 3,157,600.00***			***$ 740,000.00***	***$ 2,417,600.00***	***$ 3,157,600.00***
Environmental and Regulatory Compliance						
State Compliance	$ 20,000.00	1	lump sum	$ -	$ 20,000.00	$ 20,000.00
Federal Compliance*	$ 10,000.00	1	lump sum	$ 10,000.00	$ -	$ 10,000.00
Permitting	$ 20,000.00	1	lump sum	$ -	$ 20,000.00	$ 20,000.00
Environmental and Regulatory Compliance Subtotal	***$ 50,000.00***			***$ 10,000.00***	***$ 40,000.00***	***$ 50,000.00***
Total Direct Costs				**$ 750,000.00**	**$ 2,680,455.54**	**$ 3,430,455.54**
Approved Indirect Costs	***Basis***	***% of Basis***				
As per Federally approved Indirect Cost Rate Agreement	***$ 114,097.00***	***250.69%***		$ -	$ 286,029.77	***$ 286,029.77***
Total Project Costs				**$ 750,000.00**	**$ 2,966,485.31**	**$ 3,716,485.31**

*Federal Environmental Compliance Costs were estimated based on input provided by local Reclamation office compliance staff.

C. Budget Narrative

Salaries and Wages

The District's Engineering Manager, Jacob Wiley, will function as the Project Manager. Other personnel involved in implementation of the Proposed Project include the Principal Engineer, Contracts Manager, Inspectors, Water Systems Supervisor, Water Operators, Water Quality Supervisor, Water Quality Technician, and Electrical Services Supervisor. For each of these personnel positions, Table 4 indicates the rate of compensation, estimated hours, and total salaries and wages for the Proposed Project on a task by task basis. Hours are based on estimated level of staff involvement and duration of the Task based on the Schedule shown in the Technical Project Description. Rates reflect current rates and do not include fringe benefits or indirect costs. While rates generally increase each Fiscal Year, the amount is not known until the budget is approved each year. Salaries of administrative staff are not included and covered in the Indirect Cost section of the Budget Proposal.

TABLE 4: SALARIES & WAGES					
Employee	Task	Activity	Hours	Rate	Total Wages
Engineering Manager - Jake Wiley	2	Preliminary Design	60	$ 87.56	$ 5,253.60
	3	Professional Services Procurement-Final Design	10		$ 875.60
	4	Environmental Compliance	10		$ 875.60
	5	Final Design-Well Drilling	40		$ 3,502.40
	6	Contractor Procurement-Well Drilling	10		$ 875.60
	7	Permitting	10		$ 875.60
	9	Final Design-Well Equipping	40		$ 3,502.40
	10	Contractor Procurement-Well Equipping	10		$ 875.60
	12	Project Administration	10		$ 875.60
		Subtotal	200		$ 17,512.00
Principal Engineer	2	Preliminary Design	120	$ 66.52	$ 7,982.40
	3	Professional Services Procurement-Final Design	20		$ 1,330.40
	4	Environmental Compliance	30		$ 1,995.60
	5	Final Design-Well Drilling	80		$ 5,321.60
	6	Contractor Procurement-Well Drilling	20		$ 1,330.40
	7	Permitting	30		$ 1,995.60
	9	Final Design-Well Equipping	80		$ 5,321.60
	10	Contractor Procurement-Well Equipping	20		$ 1,330.40
		Subtotal	400		$ 26,608.00
Contracts Manager	3	Professional Services Procurement-Final Design	20	$ 73.55	$ 1,471.00
	6	Contractor Procurement-Well Drilling	40		$ 2,942.00
	10	Contractor Procurement-Well Equipping	40		$ 2,942.00
		Subtotal	100		$ 7,355.00
Inspection	7	Construction - Well Drilling	550	$ 40.68	$ 22,374.00
	10	Construction - Well Equipping	550		$ 22,374.00
		Subtotal	1100		$ 44,748.00
Water System Supervisor	10	Construction - Well Equipping	60	$ 53.08	$ 3,184.80
		Subtotal	60		$ 3,184.80
Water Operations	10	Construction - Well Equipping	120	$ 41.40	$ 4,968.00
		Subtotal	120		$ 4,968.00
Water Quality Supervisor	10	Construction - Well Equipping	40	$ 51.95	$ 2,078.00
		Subtotal	40		$ 2,078.00
Water Quality Tech I/II	10	Construction - Well Equipping	80	$ 42.71	$ 3,416.80
		Subtotal	80		$ 3,416.80
Electrical Services Supervisor	10	Construction - Well Equipping	80	$ 52.83	$ 4,226.40
		Subtotal	80		$ 4,226.40
		TOTAL HOURS	**2180**	**TOTAL COST**	**$ 114,097.00**

Fringe Benefits

A Fringe Benefits rate is applied to Total Salaries and Wages for employees of RCWD. A base hourly rate plus additional rates for fringe benefits is included in the budget. As per a provisional 19/20 Indirect Cost Negotiation Agreement (Appendix D), Fringe Benefits are charged at 93.13%. This rate is Federally-approved and is a provisional rate for billing purposes. Total Fringe Benefits is $106,258.54. Indirect Costs allowed in the Indirect Cost Negotiation Agreement are computed separately as discussed below.

Travel

There are no travel costs included for the Proposed Project.

Equipment
There are no equipment costs included for the Proposed Project.

Materials and Supplies
Materials and supplies required for implementation of the Proposed Project include the cost associated with bid document reproduction for distribution and cost of advertisement for bidding. These cost are estimated based on previous similar projects at $2,500.

Contractual/Construction
RCWD contracts exceeding $10,000 in value are all procured using a competitive method consistent with CFR 200.320 *Methods of procurement to be followed.* A total of five contracts exceeding this amount will be executed for implementation of the Proposed Project, three of which pertain to project design and two of which pertain to project construction. All five contracts will be executed after the grant award date. The design contracts are for Preliminary Design, Final Design-Well Drilling, and Final Design-Well Equipping. Based RCWD staff's prior experience with design contracts for well drilling and equipping, the combined cost for the Proposed Project's three design contracts is anticipated to be $550,000. In addition, based on staff's experience with construction contracts pertaining to well drilling and equipping, the total cost of the Proposed Project's two construction contracts will be approximately $2,607,600. Work performed under the three design contracts will include:

<u>Final Well Drilling Design</u>

- Preparation of Technical Plans, Drawings and Specifications;
- Permitting and Bidding Assistance;
- Bidding Assistance;
- Construction Management & Inspection;
- Comprehensive Well Destruction / Completion Report; and
- Preparation of Drinking Water Source Assessment Documents

<u>Final Well Equipping Design</u>

- Preliminary well site layout alternatives;
- Utility verification (potholing), traffic control details, and encroachment permit
- Well site and well site access road grading plan and storm drainage improvements;
- Engineering design of the well discharge piping and connection to the existing system;
- Engineering design of the well pump-to-waste piping and discharge location
- Engineering design of conduit(s) for an electrical service from SCE's point of connection to the well site;
- Engineering design of the proposed well equipment;
- Traffic control details for construction
- Preparation of contract documents (bid documents, drawings, and specifications);
- Acquisition of all required construction encroachment permits;
- Preparation of engineer's estimates and construction schedules; and
- Bidding period support

Furthermore, the following tables show a breakdown of estimated costs for work that will be completed for fulfillment of the two construction contracts.

WELL DRILLING CONTRACT				
Item Description	**Quantity**	**Unit**	**Unit Price**	**Total Price**
Well 172 - Well Drilling				
General				***$66,000***
Mobilization/Demobilization	1	lump sum	$66,000	$66,000
Site Work				***$288,000***
Excavation and Clearing	1	lump sum	$30,000	$30,000
Access Road Grading/Prep	1	lump sum	$30,000	$30,000
SWPPP Compliance	1	lump sum	$6,000	$6,000
Elevated Well Pad Construction	8750	cubic yard	$24	$210,000
Site Restoration Upon Completion	1	lump sum	$12,000	$12,000
Well Drilling and Construction				***$993,000***
Drill Pilot Hole and Isolation Zone Testing	500	linear foot	$270	$135,000
Ream Pilot Hole and Drill Full Diameter Well	500	linear foot	$180	$90,000
Install 316L SS Well Casing	500	linear foot	$1,200	$600,000
Pump Testing and Development	1	lump sum	$120,000	$120,000
Well Disinfection and Clean Up	1	lump sum	$48,000	$48,000
Subtotal - Well Drilling				**$1,347,000**

WELL EQUIPPING CONTRACT				
Well 172 - Well Equipping				
General				***$66,000***
Mobilization/Demobilization	1	lump sum	$66,000	$66,000
Site Work				***$354,000***
Site Paving	30000	square foot	$9	$270,000
Site Drainage	1	lump sum	$42,000	$42,000
Switchgear, Transformer, and MCC Concrete Pads	1	lump sum	$18,000	$18,000
Concrete Well Block	1	lump sum	$18,000	$18,000
Discharge Piping Concrete Pad	1	lump sum	$6,000	$6,000
Mechanical				***$588,000***
250 HP Vertical Lineshaft Pump and Motor Equipment	1	each	$240,000	$240,000
250 ft of 12-Inch steel well pump column piping	250	linear foot	$300	$75,000
12-Inch Steel Discharge Head and Wellhead Piping	250	linear foot	$300	$75,000
12-Inch Steel Pump to Waste Piping and Discharge Structure	250	lump sum	$240	$60,000
Valves, Flow Meters, and Well Mechanical	1	lump sum	$120,000	$120,000
Miscellaneous Couplings, Taps etc	1	lump sum	$18,000	$18,000
Electrical				***$252,600***
Electric Utility Connection fee	1	lump sum	$3,600	$3,600
250HP 18-pulse VFD	1	each	$12,000	$12,000
MCC w/ 30 kVA TX, panelboard, and Manual transfer switch	1	each	$60,000	$60,000
480V Metered Switchboard	1	each	$48,000	$48,000
Conduit and Wire	1	lump sum	$48,000	$48,000
Lighting and Ground	1	lump sum	$9,000	$9,000
Instrumentation	1	lump sum	$12,000	$12,000
Control Panel, including PLC, UPS, etc.	1	each	$90,000	$50,000
PLC Programming	1	lump sum	$18,000	$10,000
Subtotal - Wellhead Equipping				**$1,260,600**

Third Part In-kind Contributions

No work will be performed by third-party contributors for implementation of the Proposed Project.

Environmental and Regulatory Compliance

The Proposed project budget contains line items for environmental and regulatory compliance with the California Environmental Quality Act, and local permitting requirements. In addition, the District understands that the introduction of federal funding may prompt a review under applicable Federal environmental laws. Therefore, also included in the budget is an estimated line item cost of $10,000 for the potential Federal environmental compliance effort. This amount is based on recent input provided by compliance staff at RCWD's local Reclamation office.

Other Expenses

There are no costs categorized as "other" for the Proposed Project.

Indirect Costs

The Indirect Cost rate shown of 250.69% includes General and Administration Overhead, Engineering Overhead, and Vehicle & Equipment Overhead as a percentage of total RCWD labor cost. Fringe Benefits are included separately under "Fringe Benefits" using the rate of 93.13%. These rates are Federally-approved through an Indirect Cost Negotiation Agreement (Appendix D) and are provisional rates for billing purposes. Total estimated indirect costs for the Proposed Project are $286,029.77.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

- **Will the Proposed Project impact the surrounding environment (e.g. soil (dust), air, water [quality and quantity], animal habitat)?** *(Describe all earth-disturbing work and any work that will affect air, water, or animal habitat in the project area. Explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts)* No, the Proposed Project will be performed on property that is considered already disturbed, and shouldn't pose significant environmental impacts. The Final Design phase of the project will include environmental studies, which examine potential impacts and make recommendations for any necessary mitigation measures.
- **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?** No species listed or proposed to be listed as a Federal endangered or threatened species, or designated critical habitats are known to reside within the Proposed Project area.
- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"?** No, the Proposed Project will not affect riparian habitat, including federally protected wetlands, as there are none in the project area. No associated impacts will occur and no mitigation is required.
- **When was the water delivery system constructed?** The majority of the water delivery system was constructed by the late 1980s; however, some infrastructure continues to be constructed today as the service area is being built out.
- **Will the project result in any modification of or effects to individual features of an irrigation system (e.g., head gates, canals, or flumes)?** No, the Proposed Project will not result in any modification of or effect to individual features, such as head gates, canals, or flumes, of an irrigation system.
- **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?** There are no buildings, structures, or features listed or eligible for listing on the National Register of Historic Places within the Proposed Project sites. There are, however, at least 10 buildings in the Old Town Historic District of the City of Temecula, which is within the RCWD service area. These buildings are in the well-developed Old Town area and the Proposed Project would not affect them.
- **Are there any known archeological sites in the Proposed Project area?** No, there are no known archeological sites in the Proposed Project area.
- **Will the project have a disproportionately high and adverse effect on low income or minority populations?** No, the Proposed Project will not have any adverse effects on low income or minority populations.
- **Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?** No, the Proposed Project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on 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?** No, the Proposed Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

REQUIRED PERMITS / APPROVALS

When Preliminary Design and Final Design are complete, a contractor will be procured for well drilling. Upon issuance of the contract for the drilling of the well, the District and the contractor will jointly apply for a well drilling permit through the Riverside County Department of Environmental Health. This permit is typically issued within one to two weeks from time of submittal and its primary purpose is for the County to gather information about the proposed well for their database and ensure there are no public health concerns associated with the proposed placement of the well. In addition, the District maintains a water supply permit from the Regional Water Quality Control Board (RWQCB), which requires the District request a permit amendment prior to a new well going into service. A permit amendment requires that the District complete an application package that includes a well construction details, a Drinking Water Source Protection Plan, documentation of Environmental Compliance (California Environmental Quality Act), well and disinfection data sheets, and an operations plan. Once the application package is approved, RWQCB completes the permit amendment and issues to the District any conditions for operation of the facility including water quality monitoring requirements and water quality thresholds.

EXISTING DROUGHT CONTINGENCY PLAN

The Rancho California Water District is the lead agency in the development and implementation of the Upper Santa Margarita Watershed (USMW) Region's Integrated Regional Water Management (IRWM) Plan. The IRWM is consistent with the California Water Plan and RCWD's Urban and Agricultural Water Management Plans. The IRWM Plan includes a comprehensive Stakeholder Advisory Committee and Regional Water Management Group process to identify impacts and needs in the Region, and to identify key projects. The Proposed Project is consistent with the IRWM Plan's goals and objectives. The IRWM Plan is attached to this proposal as Appendix A.